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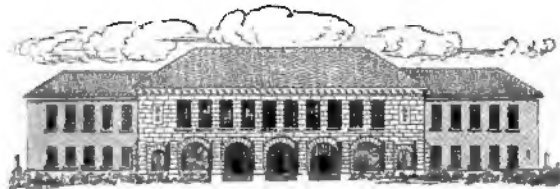
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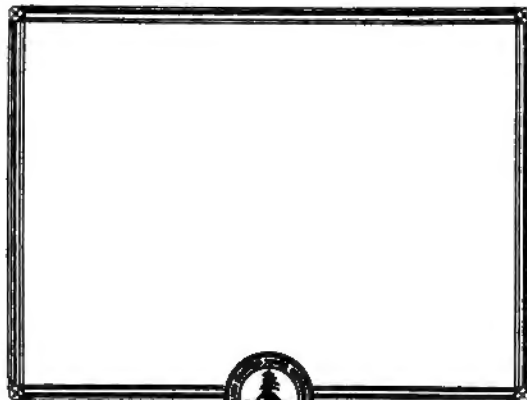
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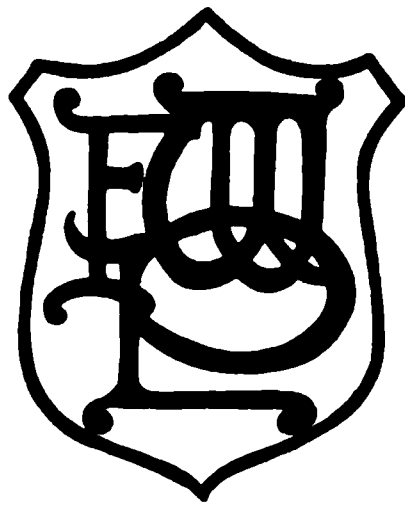


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FRANCIS W. PARKER SCHOOL YEAR BOOK

THE COURSE IN SCIENCE



VOLUME V

JULY, 1918

Published annually by the Faculty of the Francis W. Parker School, Chicago
PRICE, FORTY CENTS

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Press of
Francis W. Parker School
330 Webster Avenue
Chicago

PREFACE

There has been a break of two years in the publication of the FRANCIS W. PARKER SCHOOL YEAR BOOKS. This was due to the fact that the faculty deemed a new and radically improved course of study necessary, and voted, in the fall of 1915, to devote the faculty study and meeting time as far as possible to the preparation of a representative school curriculum, with a view to publishing it as the fifth YEAR BOOK.

The entire faculty was divided, according to their own choice, into the following committees: Committee on English, Committee on Foreign Languages, Committee on Science, Committee on History, Committee on Handwork, Committee on Art, and the Problems Committee. This latter committee set out to find real problems, arising naturally in the lives of the children, and to make these problems the basis of the course of study. It reported to the faculty in a series of meetings, and at the end of the year presented plans for reorganizing the work of the school.

While these plans provided opportunity for the exercise of a large measure of initiative and choice on the part of the pupil and the development of a scheme of self-government in the high school, they did not seem immediately practical in their entirety. The faculty discussions were stimulating and instructive, and influenced strongly current classroom teaching and the work of the other committees, but it was found at the end of the year that there was nothing ready for publication.

Of the other reports, that of the science committee was nearest to completion; and its members were asked, if possible, to get the science curriculum of the school in shape for publication in June, 1917. Other matters of pressing importance for faculty consideration again delayed the work, so that the fifth YEAR BOOK is not being issued until July of the current year. It is hoped that this volume will prove useful to teachers of science in many schools, not as a finished, static product, but as describing the way in which one important type of human experience and study is dealt with in one school.

It is proposed that in the sixth YEAR BOOK an attempt be made to show how the World War for Freedom has influenced the class-room work and activities in our school. The title of this book will probably be *Education During War Time*.

June, 1918.



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GENERAL PRINCIPLES UNDERLYING THE ORGANIZATION OF THE COURSE IN SCIENCE

The chief value of any course of study is that it provides a good point of departure for new attempts to improve the choice of materials and the methods of instruction. It embodies the best that has been accomplished, clarifies the situation, and makes possible further progress. Any tendency to crystallize the methods of working, or to fix the content of subject matter, is to be avoided. Therefore, the course in science which is presented in this year book is looked upon, not as a finished piece of work but as a stepping-stone to better science teaching. It is not a curriculum which has been written by a few in authority with the expectation that teachers will slavishly follow it, but it is the result of a number of years of independent, experimental, and developmental work in all the grades of the school. For this very reason it may be criticized as somewhat incoherent and lacking in logical development from grade to grade, faults which made-to-order curricula usually lack. This criticism is not dismissed as unimportant, for it indicates the direction in which future improvement may be sought and secured all the more easily, by reason of the work which the preparation of this course of study has involved.

The first step in formulating the course in science was to draw up a statement of the general principles which were to control the work. This formulation of principles, after discussion and revision was accepted by all members of the science committee as a tentative basis on which to proceed. When the work was nearly complete, the statement of fundamental principles was again critically examined and further revised in the light of what had been accomplished. The final revision, which follows, has been presented to the faculty as a whole and approved by them.

I.

The science course shall be organized about those problems and activities of the child which call for study, investigation, and experiment in the fields of physical and natural science.

(a) The problem basis for organization of the science course does not mean that the logical or formal organization, so prominent

in most curricula will be lost to sight, but that the logical organization will be subordinated to the natural or psychological organization, based on activities and needs. It is reasonable to suppose that if the problems are adequate in number and scope, and properly worked out, the need for formal and logical organization will be felt and developed naturally in the course of the work, rather than made the artificial starting-point for it.

(b) The problems of the course, as worked out, should make the pupil conscious of fundamental scientific principles, thus preventing scrappiness and making for the proper organization of the science work.

(c) While the problem basis for the course insures a content with a direct appeal to the pupil, it does not follow that the full or larger values of the work will be apparent at the outset. The work as it develops should produce a growing appreciation of its larger value.

(d) The problems chosen should provide for a certain amount of overlapping, so that information gained in connection with one problem will be used in the solution of others, and the experience gained in one grade utilized in the work of the next.

(e) The course, in addition to formulating these problems, should supply needful data, lists of material, sources of information, and directions for their solution.

II.

The science course shall provide abundant opportunity for the pupil to acquire a rich and varied experience through actual contact with real materials. Informational topics and discussion shall give place, whenever possible, to experiments, to the handling of materials, to the working with apparatus, to the acquiring of first-hand experience on which inferences and conclusions may properly be based.

(a) Discussion without a proper basis of experience, and inferences based on guess work, lead to a destruction of real interest and tend to establish habits of thought which are intellectually and morally dangerous.

(b) Programs must be sufficiently flexible to make possible the widest use of the shops, the laboratories, the garden, and of excursions for experimental and observational work.

(c) The care of pets and animals in the graderoom, or on the school grounds provides projects of especial value. This work develops individual and social responsibility and secures a wholesome contact with animal life which would otherwise be absent from the experience of many children.

(d) Each grade will require special science apparatus, aquaria, work-benches, sand- and delta-tables, and materials of great variety. Space to store and to use freely this equipment is indispensable.

III.

The teacher's freedom, individuality, and preferences, shall be given wide range in the matter of developing the problems suggested in the science course, and in finding new and better ones.

(a) The science curriculum should be flexible and dynamic, constantly developing and improving, not fixed and static. Towards this end the teachers actually engaged in carrying on the work are best able to detect weaknesses and suggest improvements. These teachers therefore must take an important part in the preparation and framing of any syllabus or course of study in science.

(b) It does not follow that teachers should be free to follow mere personal opinion or that they should indulge every whim in modifying the course of study. They should expect to justify every innovation by sound reasons and prove by the results obtained the worth of their ideas.

IV.

Specialized science has little or no place in the curriculum of the elementary school.

(a) Elementary biology, botany, physics, chemistry, etc., should not be taught as such, but much material drawn from these several sciences will contribute to the satisfaction of the child's interests and the solution of his problems. The necessary elements from these special sciences will thus be fused by these interests and problems into an organic whole, and not remain a composite of fragments taken from the divisions of specialized science.

(b) The problem if properly chosen, developed, and carried out, will enable the child to gain a fund of experience and knowledge which can be stated in terms of specialized science, and so the adequacy and completeness of the course can be estimated.

(c) The problem basis of organization will by its very nature prevent specialization. Few problems will be found which lie wholly inside the limits of a single specialized science.

V.

The natural interests of children in the elementary school call for the study of plant life, animal life, climate, foods and food supply, rocks and the soil, earth forms, and of simple machines and mechanical forces. Many of the problems involved are geographical, or have geographical causal relations. The work will gain in continuity, effectiveness, and coherence, if these relations are emphasized.

(a) The organization of a comprehensive course in science, on the basis of large projects with subordinate problems, experiments, and the like, requires the inclusion of geography as an integral part of the course of study, and makes possible problems of a more varied character and of wider scope. It also makes for a simpler and more flexible school program.

VI.

The science course shall be continuous throughout the eight years of the elementary school, and furnish a proper basis and background of experience for the high-school courses in specialized science.

(a) The problems of the pupil constantly require the study of science and the development of scientific methods of study in order to find their solution. For this reason, science study rightly belongs in every year of both the elementary and the high-school life of the child.*

VII.

The many connections and correlations which science work has with other subjects of study shall be indicated as fully as possible in presenting the course in Science.

(a) Science work demands accuracy of definition, the power to organize material, the ability to think logically and to express the thought in clear and concise statements. This training in habits of thought which underlies clear and exact expression should render more effective all the written and oral composition of the school, and is one of the most important services which science study makes to the education of the child.

*To give such a course is at present not possible in our high school, on account of the lack of facilities, as explained in the article on *Science in the High School*.

(b) The work in science frequently requires the use of mathematics and so supplies real problems for its study.

(c) Much of the handwork in many grades grows directly out of the science problems and contributes vitally to their solution.

VIII.

In the elementary school hygiene and physiology shall be taught in connection with the gymnasium work and preferably by the gymnasium teacher. These subjects naturally contribute to each other—the work in the gymnasium offering opportunity to apply what has been learned in recitations in hygiene and physiology, and the latter serving to make the former more purposeful and intelligent.

(a) It is thought that these teachers will be able to connect matters of hygiene and physiology with the problems of exercise, muscular control, proper methods of eating, breathing, etc., so as to furnish real motive for this study.

(b) The segregated classes will admit of freer and more normal discussion of certain important problems connected with hygiene.

In the detailed outlines of the science course which follow, it is hoped that the reader will find the embodiment of the principles which have been set forth. While the problem basis of organization is shown throughout the work, it has seemed necessary to retain many topical headings and divisions, in order to show how the problems and questions of the pupil naturally classify into topics or units of study. This also tends to offset the objection most commonly made to problem or project teaching, that it fails to secure a proper grounding in the fundamental principles of science and results in a hodge-podge of unrelated facts and ideas.

In harmony with the second fundamental principle, the emphasis throughout has been placed on the experimental work as the chief means of securing that first-hand experience and the actual handling of materials which is the special contribution of science study to the education of the child. For this reason, such purely descriptive work as the picturesque side of geography, the study of peoples and customs, has been largely eliminated from the outline.

The outcome of the science work in the several grades as well as its relation to the work in mathematics, English, and handwork is indicated by the illustrations, by representative children's papers, recitations and morning exercises.

NATURE STUDY IN THE KINDERGARTEN

Nature experiences in the kindergarten are the outgrowth of contact with materials brought into the room by teachers or pupils, or from the observations made during frequent walks in the park and trips to the country. In the park, easily accessible are a zoo, large bird-house, conservatory, fountain, garden, the Academy of Sciences, and the lake shore within a distance of four blocks. The children are frequently in the country for week-ends, besides spending the summer months on farms, at the seashore, or in the mountains. The rich background thus furnished, with the immediate kindergarten environment, affords splendid opportunities for developing definite nature imagery. The collecting instinct is much weaker in children of kindergarten age than the instinct to play, but they do like to pick up things and take them to some interested person, teacher or parent. Naturally, they do not know what to do with their collections, and this is where the teacher should take hold of the budding instinct and strengthen it in every legitimate way. We make use of every appropriate means of expression to help the children build up well-defined images of the essential elements of their observations. The older children can express more than the younger ones, but a given experience is common to all through conversation, songs, stories, pictures, specimens, and games. The principal nature centers we follow for a little way are given herewith, together with the activities associated with them.

Leaves.—The first center growing out of our walks is that of the falling leaves. We obtain brightly colored leaves with which to work, and make the impression through the activities of drawing, cutting, painting, and clay impressions. Appropriate songs are used, and the poem, *How the Leaves Come Down*.

Rain.—Rain is talked about on some of the first rainy days. We ask such questions as: Where does it come from? What does it do for us? Who likes it? Rhymes and poems about the rain are said, songs about the rain are sung, and the story of *How we First Came to Have Umbrellas* is told. The story is illustrated with clay or by drawings. Pictures of a rainy day are drawn on the blackboard or on paper.

Bulbs.—Bulbs for indoor blooming are planted in October. It is usually the first contact with bulbs that the children have ever had. The work consists of sifting the earth, mixing in fertilizer, and properly planting paper-white narcissus and daffodil bulbs. Drawings and models of the bulbs are made. Drawings are made of the narcissus and daffodils when in bloom, and plaques of the daffodils are modeled for paper-weights.



PREPARING THE WINDOW BOXES FOR BULBS

The Fall Harvest.—The harvest idea is built upon the children's summer experiences upon the farms, which we vivify by pictures and concrete materials. We emphasize what we get from gardens, orchards, and fields. We talk about places of storing, using the barn as the chief center, and how supplies reach our homes through the grocery, by trains, and by boats. We model the better known vegetables and fruits; build barns and bins in which to store the modeled fruits and vegetables; lay out a farm in a sand-tray, and make individual farms on smaller trays. Jelly is made as a sample of the way fruit is stored.

in our city homes. Stories embodying the ingathering idea are told and illustrated, and harvest songs are sung.

Seeds.—The seed we usually emphasize is the milkweed, the pods of which we model, and later we let the seeds fly outdoors. Beyond this simple experience, seeds make almost no appeal to children of kindergarten age.

WINTER QUARTER

Winter Sports.—With the first good snow in January, we begin active winter sports, such as tobogganing, sliding on sleds and ice, making snow men, and shoveling snow. We look for tracks in the



PUTTING ON THE FINISHING TOUCHES

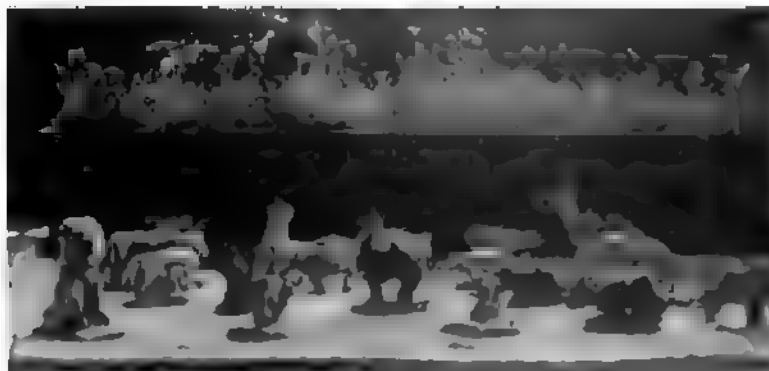
snow and observe frost pictures and snow crystals. We build toboggans with large blocks, make wooden sleds large enough to use, and make snow men out doors. Pictures are used to show many kinds of winter sports other than children can play, the aim being to em-

phasize the fun winter affords. We have good songs about snowflakes and snow men, and poems and stories that tell about winter time.



A GAME OF FOX AND GEES

Animal Life.—Winter walks take us often to the animal- and bird-house. As a center of interest for several weeks, the animals we like best are used. These are the elephant, bear, lion, tiger, giraffe, and camel. The making of a zoo is the unifying purpose, and under its stimulus the animals are modeled, cut free hand, drawn on the



ANIMALS MODELED BY THE CHILDREN

board, and painted. Cages are made from pasteboard boxes. Good pictures of the animals are cut out, mounted on cardboard, and then

on small blocks, so they can be used to play with, as the clay models are too fragile for this purpose. Good mounted pictures of the animals are about the room; songs about bears, elephants and tigers are sung, and animal stories and anecdotes are told. The children choose any animal they like, and as many as they like, which stimulates observation.

Sun.—Some time in March, when the power of the sun begins to be strongly felt, we follow up the question, What does the sun do for us? It melts the snow, swells the buds on trees and bushes, starts the grass and pussy-willows. The children illustrate the story of *The Wind and the Sun*; sing songs of the sun, daffodils, and pussy-willows; model and draw the pussy-willows, and make pictures of the indoor flowers.

SPRING QUARTER

The activities of the spring quarter are centered mainly about what is happening out of doors.

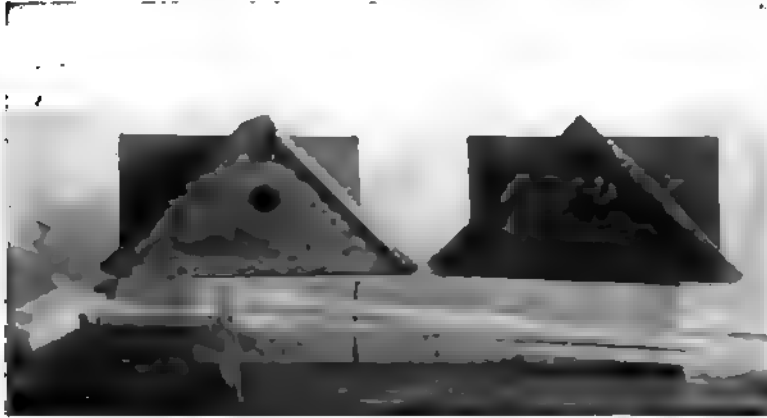
Wind.—In early April the problem is to find out what the wind does for us. It helps in sailing boats, flying kites, drying clothes, and



A NAUTICAL PROBLEM

turning mills. The weather-vane shows the direction of the wind, and helps certain people to know when to do their work. The activities include making pinwheels of paper to play with out doors; making sailboats of wood to be sailed on the lagoon or fountain basin; cutting

clothes of paper to hang on clothes-lines; washing paint cloths or doll-clothes and drying in the wind; folding small sailboats of paper; cutting, folding or drawing balloons and kites, and making weather-vanes of wood or heavy cardboard. The stories of *The Foolish Weather-*



BIRD-BOXES AND GARDEN TOOLS

Vane and *Little Half Chick* are illustrated by drawings or models. We use songs about the wind, and Stevenson's poem, *The Wind*.



MAKING NESTS FOR THE PARK BIRDS

Birds.—We aim to become acquainted with some of the birds we see daily, particularly the robin, bronzed grackle, sap-sucker, red-

headed woodpecker and yellow warbler. We see many more birds than these, and the children most interested learn to know some of them. We look for food, nesting-places, nests, and eggs. We listen for bird songs and calls; make use of stuffed specimens of birds in our room, and visit the Academy of Sciences. We use the stories *How the Robin's Breast Became Red*, and *The Origin of the Red-Headed Woodpecker*. As our experience enlarges we talk about the good birds do, the pleasure they give, and what we may do to attract them to our homes. The children draw, model, and paint nests, eggs, and birds; make bird-boxes of wood to take home; illustrate stories, and sing songs about birds.



BUILDING THE GARDEN FENCE

Flowers.—During the winter when the bulbs in the window-boxes are in blossom, we make pictures or models of them, and thus become acquainted with the paper-white narcissus, daffodil, and crocus. Later, we emphasize the tulip and dandelion, and any other flowers we may have a particular reason for wanting to know. These flowers are modeled, painted, and drawn. We use them for designs, or decorations for book covers or May baskets. We emphasize the colors and odors of flowers, first by actual experience and then by sense games. Sometimes we are able to trace the pollen the bees bring to the hive, particularly that of the oriental poppy and the dandelion. Suitable songs and stories help to strengthen these images.



COMPLETED FENCE AND BED OF PORTULACCA

Garden.—Gardening isn't a natural interest of little children, but digging is. We have gradually reduced the amount of real gardening to planting a bed of popcorn by the older group of children. This furnishes a crop to harvest in the autumn when they have entered first grade, besides being a good seed to handle in planting. The younger children have planted climbing beans, morning-glories, sun-flowers, and portulacca about the lunch-room and printing-shop. The responsibility resulting from such planting is small, yet enough to initiate them into garden processes. The work includes making garden-stakes and labels, and, at one time, a garden-fence; laying out plan of corn-bed in sand tray; drawing plan of same; staking and marking hills in the garden; spading and raking in preparation for planting; and weeding. We use songs, games, and finger plays to help build up the processes of simple gardening.

Buds and Leaves.—In the spring we watch their development through twigs brought indoors and the bushes and trees outdoors. We use the pussy-willow and twigs from the cottonwood, lilac, and oak. We draw and model the pussy-willow.

Butterflies, Moths, Dragonflies.—In the autumn we generally find the common woolly caterpillars and put them in a cage to watch for the winter house they make. Usually someone brings in the cocoons of the cecropia moth. We have had the chrysalises of the monarch



CLEANING THE YARD WITH THEIR OWN RAKES

and black-swallowtail butterflies and had both come out in the kindergarten. Children are unfailingly interested in this development of moths and butterflies, and to stimulate their observation, we make pictures of them by drawing or cutting, and model the cocoons. They gather, by conversation and observation, that butterflies obtain their food from flowers. We generally see many dragonflies in the spring, but do no more with them than call them by name, contrast them with butterflies, and refute the tradition that they sew up children's ears.

Earthworms and Ants.—We sometimes prepare a large glass jar with varying layers of soil, have the children put in earthworms, cover the jar to keep it dark, and watch the results. We have never had an ant-colony, but do notice both earthworm castings and ant-hills on our walks. The children are much interested in the way robins extract earthworms for their food.

Bees.—There is a hive of bees in the kindergarten room from early spring to November. These are placed in a south window, the lower sash of which is raised about four inches; an extra piece of wood is fitted under it, with an opening about a foot long and two inches high. From the hive to this opening, a runway is made of glass, which fits closely the exit leading outdoors. This furnishes opportunity to watch the bees as they go and come on their busy rounds. Under these conditions, bees afford the most normal indoor

insect life we have observed. Most of the activities of the bees are too difficult for the children to follow, but they are greatly interested in watching the bees move about in the hive and fly to and from it. Whenever we find bees on flowers in the park, we claim them for ours. We do see them bring in the pollen, sometimes note the color of it, and trace its possible source. When the young bees are hatching, we place the trays containing them next to the outside of the hive, so the children can see some of these activities. The knowledge gained consists chiefly of the facts that bees make honey from flowers, live in hives, and are interesting creatures.

OUTCOME

Aside from the physical activities just stated, there are other gains from these simple beginnings of life-long interests. Gradually the children are increasing their power to attend; their observations are being defined; their sympathy and respect for plant and animal life is enlarged; and they have real joy in gathering the leaves, in finding the first opening buds, and in watching the robins build their nests. Nature interests are an important factor in leading the child away from himself out into the great life around him. Certainly, no subject in the kindergarten has greater possibilities for awakening wonder and laying the foundation for the seeing eye and the hearing ear.

CHANGE IN PROGRAM

A radical change has been made in the matter of group work in the kindergarten for the year 1917-18. Heretofore the program began with a period about thirty minutes in length, which was devoted to general exercises with the whole group of kindergarten children seated about the director. At such times there was singing, exhibits of toys, and other concrete materials; contributions by the children of their experiences outside of school; a talk about some phase of the subject forming the basis of the program, or a story. Following this, there was a period of twenty minutes for rhythmic exercises and games. Then the children were divided into groups, according to age and ability, and were cared for by different teachers. These teachers planned what should be done at the table, and chose the material with which to work. There were two of these group periods; the second one, being out of doors, afforded the opportunity for many excursions to the park. The handwork previously given as the result of this

nature contact was worked out under the direction of the group teacher. There was opportunity for creative work by the children and real expression was afforded by this plan of work, but the teacher chose the general subject and the materials.

This year, we have adopted a plan of allowing the children to choose what they shall do, and the materials with which to do it, for a period varying from forty to sixty minutes each morning. Usually we have a general exercise, as formerly, when we come together for an interchange of ideas and experiences; but when the children go to their projects as soon as they arrive in the morning and are too interested to care to leave them, the general exercise may be delayed or omitted for the day. With such a plan of work, more material is about and more time than formerly is needed to put it away; for it is one of the rules that the children must assist in getting the room in order.

With the plan of allowing the children to choose what they shall do for the given period, it follows that the teachers are not making the demand that they express in some form their nature observations. The result is, we have much less of that type of expression than formerly. But what has happened has been very interesting. From the beginning, children have been bringing in nature materials even more than usual. We have talked about them and cared for them. We have needed the insect cage for the caterpillars and cocoons; we have pressed leaves, strung seeds, and have done some drawing on the blackboard. All of the marked seasonal changes have been as interesting as in other years. Because of the great amount of snow and severe weather, we have had occasion to accentuate more strongly the poems, stories, and songs about winter. Although there was a sample sled in the room, only one child wanted to make one, and that was not a success.

Heretofore, we have emphasized the bird-box when the birds returned in April. This year, early in January, a boy came in one morning and said he wanted to make a bird-box to take to his ranch in Montana. There are two sample bird-boxes in the room. The teacher, to whom the boy made known his wants, said she thought he would be unable to make a box such as these alone, and suggested a robin's shelter instead. The boy was satisfied with this substitute, and proceeded with his project. From time to time other boys have made these bird-shelters entirely on their own initiative. Recently a little boy, who had done very crude handwork, announced that he

wanted to make a bird-box. Upon investigation it proved he didn't want to make the bird-shelter, but a bluebird-house. To convince the teacher as to just what he wanted, he got the sample box and showed her. After some talk on the ways and means of making it, it was settled that he should have the wood to work with; and the result has been a remarkable gain in power in handwork and appreciation for a piece of work well done.

The first signs of spring, the swelling leaf-buds and the "blossoming grass," as one four-year-old called the first showing of green grass, are really exciting.

The new regime has not been carried through an entire school year, but such experiences as these lead us to expect as much real appreciation and joy through nature contacts this year as by the method formerly used.



THE FIRST GRADE

In the first grade, the great problem in nature study is to help the child understand his environment in its relation to himself; to help him interpret the phenomena with which he comes in daily contact; and through observation and simple experiments to enable him to know more of the collections he may make. These problems are related to the fundamental needs of food, shelter and clothing.

The child has the following centers of interest near at hand: The garden; the farm; the park, with its trees and flowers, including two type forms of landscape; the woods; and the lake shore. The garden study answers such questions as: How are seeds planted? What do they need to make them grow? How do weeds and cultivated plants differ in growth?

The problems which are considered in the study of the farm are related to its various activities, the work to be done, its plant and animal life. Such questions as these are discussed: Where does our bread come from? Where do we get our milk? Where do our fruit and vegetables come from?

The lake shore is visited for the purpose of asking such questions as the following: What does water do to stones? What colors are found in stones? Where does the water come from that we drink?

A visit to the woods is made for the purpose of collecting leaves and seeds, and to become acquainted with many trees. This visit is also to make it possible to realize that a shelter may be made from brush. The park is also visited in order to study special trees, as the oak, elm, cottonwood, basswood, and pine, and to recognize familiar flowers.

Throughout the work, water-colors, drawings, and models in clay are used to interpret the types of landscape observed, and as a means of expression of the child's observations.

FALL

The Garden.—The child's first interest in the fall is to find out what has happened to the popcorn which he planted in the spring



ACTIVITIES SHOWING INDIVIDUAL INTERESTS

while in the kindergarten. Harvesting the corn and husking it raises the problem of seed distribution. How did trees get planted? What helps the planting of weeds?

The relation of structure to distribution is brought out through the examination of the seeds of various trees and weeds. The pupils observe that maple seeds have wings; that the linden seed is an air-ship; that the seed of the bladder-bush is like a balloon; that the cockle-burr and burdock have hooks; while the Spanish needle has spines; and that the seeds of the thistle, dandelion, milkweed, and goldenrod are like parachutes. They conclude that seeds are scattered by the wind, water, animals, and people. The question is raised as to what seeds people plant, and why?

Foods.—The general question here is, where does our food come from? Lists of foods are made to answer this question, and an excursion is made to a model farm.

(a) *Farm Animals.*—The children observe the horses, cows, pigs, sheep, calves, colts; the ducks, geese, turkeys, and hens. They learn how the animals are cared for, and what food they need. They feed the hens and pigs.

(b) *Storehouses.*—Barns, corn cribs, silos, hay and straw stacks, bins, with their stores of wheat, oats, and corn are noted.

(c) *Farm Machinery.*—The mower, hay-rake, hay-stacker, reaper, plow, and corn-cutter are observed and distinguished.

Preparation For Winter.—The preparation for winter is the final fall topic. The questions considered here are: How do people prepare for winter—clothing, food, fuel? How do animals prepare for winter—thicker fur and hair? How do trees and plants prepare for the winter? Where do worms, toads and insects live? What do the birds do? In this connection, we study the poem, *The Swallow*.

WINTER

At this time of the year, light, heat, and cold are influences which are strongly felt, and are the first impressions leading toward a study of the seasons and their causes. Seasonal differences are expressed through water-color drawings.

Light.—The shortened day brings up the need of artificial light. The children list and draw everything that gives light. They make candle-holders out of clay and bayberry candles for Christmas.

Eskimo Life.—The short dark days, deep snow, and cutting winds, are conditions which enable the child to obtain a sympathetic under-



THE ESKIMO IGLOO

standing of the climate of the Eskimo. An imaginary visit is made to Greenland. The play instinct and the imagination are utilized in making this journey, and New York is reached by traveling on a train made of benches and a table. A boat is obtained through the

same medium and provided with food and clothing suitable for the trip. Lists of canned and dried meats and fruits are written upon the board, and other necessary foods which will not spoil.

A realistic picture of the arctic region is supplied by means of many pictures and stereopticon slides, and through the actual observation of the frozen lake, as seen by the children in passing to and from school. A visit is made to Lincoln Park, to see the polar bears, wolves, arctic fox, and Eskimo dogs. We also go to the Field Museum to see the mounted animals from the north, the musk ox, seal, walrus, and whale. The exhibits show some of the Eskimo occupations. The sledges, made of small pieces of wood and bone, suggest not only the materials used, but the climate as well. The kayaks, made of skin, show how the Eskimo uses what is nearest at hand in order to meet his needs. The carvings and drawings on ivory suggest to the child something of the Eskimo's artistic tendencies, as well as his patience and skill.

These trips help the child to answer his own questions: What does the Eskimo wear? How does he catch animals? How does he travel from place to place? How does he warm his house? Of what does he make a fire? What kind of a stove does he use?

An Eskimo village, including the animals on the land and in the sea, is modeled in clay. Pictures are drawn and painted, and stories are written describing the pictures. In the play period, an Eskimo igloo is made of snow. The school leaflets, on Eskimo life, are read.

Heat.—(a) Thermometers.—The large thermometer from *The Daily News* is used and compared with an ordinary thermometer. The parts of the thermometer are noted—the wooden back, the numbers, the glass tube, with its mercury or fluid contents. The reading of the numbers on each side of the glass tube gives practice in counting by twos.

Experiment.—The children place the thermometer in cold water, and then in hot, watching the effect on the mercury.

(b) THE EFFECT OF COLD AND HEAT UPON AIR.

Experiment.—With the aid of the thermometer, we find the differences in temperature of the air on the floor, near the ceiling, and out of doors.

The children are asked to observe the furnace, or heating-plant at home, and all observe the furnace at school. This enables them to answer questions as to how homes are heated and how the schoolrooms are kept warm.

(c) THE EFFECT OF HEAT AND COLD UPON WATER.

Experiment.—The children boil water in glass beakers, and observe



INVESTIGATING THE EFFECTS OF HEAT ON WATER

the bubbles. Where do they go? What becomes of the "water dust" or steam?

*Experiment (performed by the teacher).—*A bottle or flask is filled half full of water, fitted tightly with a stopper and placed over the alcohol lamp until steam forms in sufficient quantity to force out the cork. Why did the cork fly out? What work does steam do for us?

This leads us to a simple study of condensation and evaporation. Under condensation the questions are: What is rain? How does the water get into the air? What makes the mist you see over lake, pond, or river?

*Experiment.—*A cold glass is held over boiling water and the condensation noted. Basins of different shapes, but containing the same amount of water, are placed in the room. The children observe from which basin the water disappears the quickest. As a result of this work they see that the basin with the largest surface exposed to the air dries up first. Application is made to the drying of clothes on wash-days.

*Experiment.—*The children place the thermometer in snow and note the freezing-point. What is snow? What is hail? A bottle is filled full of water and placed outside to freeze. Why did the bottle break? Why was the cork pushed out?

*Experiment.—*Snow and salt are stirred together in glass tumblers until frost appears on the outside of the tumblers.

(d) EFFECT OF HEAT UPON SOLIDS.—The class observes that ice melts, wood burns, and metals become heated.

*Experiment.—*Steel and copper rods are placed in the flame, to find which is the best conductor of heat. The ball and ring apparatus is

obtained from the physics department, and after being used by the teacher each child has an opportunity to experiment with it for himself.

Cooking.—Apples and potatoes are cooked out of doors, in a brick oven made by the children. The effect of heat upon cereals is brought out when cornmeal, cream of wheat, oatmeal, and barley are cooked for luncheon. The effect of heat upon sugar is noted in the making of candy for Christmas. Maple sugar is made in March and the rising boiling-point observed on the thermometer during the evaporation.

Cakes, sandwiches, cocoa, and lemonade are made with the social motive of preparing these things for a luncheon, a grade party, or a mothers' meeting. Butter, cottage cheese, and ice cream are also made in the same way. The children learn how to set the table and serve the articles of food which they have prepared. They wash the dishes, put them away, and set the room in order.

Crystals.—Frost crystals, snow crystals, and crystals in ice are observed, compared, and drawings of them are made. Mineral crystals of quartz, calcite, and galena are in the room, and their crystal form is observed in this connection.

Experiment.—Making crystals. Crystals of salt, sugar, alum, copper sulphate, potassium bichromate and potassium chromate are made in the following manner: A cup of cold water is placed in a glass beaker and alum added, as much as will dissolve. The water is then heated with the alcohol lamp, and it is found that more alum will dissolve in the hot water. Alum is now added in small quantities until a precipitate forms on the stirring-rod. Strings or twigs are then placed in the solution, on which crystals are deposited as the solution cools. Crystals of the other materials may be prepared in the same way. The apparatus used for this experiment consists of ring-stand, alcohol lamp, wire gauze and glass beaker.

The following reading lesson grew out of the work with crystals:

CRYSTALS

We looked at the snow.
 We saw little diamonds.
 We saw little stars.
 They sparkled in the sunshine.
 They were snow crystals.
 We saw frost on the window.
 It looked like a picture.
 There were tiny white trees.
 There were little white leaves.
 These were frost crystals.

We found crystals under the ice.
We found crystals in the stones.
The kindergarten had a Christmas tree.
We thought crystals would look pretty on the tree.
We made many kinds of crystals.
We made red, white, orange, yellow, and blue crystals.
They were very bright.
They sparkled in the candle light.

SPRING

Lake Shore.—As soon as the weather is warm enough, a visit is made to the lake shore, for the purpose of observing and collecting stones. The children observe the action of the waves, the ripple-marks, the color of the sand, as well as that of the stones which they



TESTING STONES

collect. The stones collected include limestone, shale, slate, quartz, greenstone, and granite. These stones are examined and identified with reference to color, degree of hardness, and reaction towards acid.

Experiment.—Shells, coral, bone, marble, chalk, egg-shells, and cement are tested with dilute hydrochloric acid to show lime content.

The questions which come up in the study of stones are many and varied. Why are some stones smooth and others rough? Why do some sparkle while others look like glass? How do holes get in stones? How are stones made? What uses are made of stones? This

latter question is carried far enough to bring out the use of stone in building and street-paving.

Pebble-boxes of wood are made in the shop to hold the stone collection of each child.

Indian Life. At this season of the year, when nature fills the child with the desire to live out of doors, it seems fitting to study Indian life. The child's mental imagery is strengthened through the use of many pictures, and his imagination stimulated through dressing as an Indian. He becomes for the time a real Indian and desires to know all that he can learn about the life of the red man. The first question considered is, Where would the Indian like to live? Through pictures and stereopticon views, the place is sought where the Indian would like to live. The plains, prairies, mountains, rivers and the country around Chicago are considered and compared as to their desirability.



AN INDIAN HUNTING DANCE

The food of the Indian is the next question. What animals did he use for food? Deer, moose, buffalo, bear, mountain-goat, and small game animals are thought of as supplying food and serving other needs of the Indian. The wild animals in Lincoln Park Zoo are visited. An Indian village is modeled in clay, including most of the animals studied. The need of the Indian for clothing, for implements,

and for weapons is considered, and the children attempt to make weapons like those of the Indian. An excursion to the Field Museum is made, to get a clearer conception of the Indian's way of living and the materials and methods he used in making his weapons and tools.

RICHARD'S STORY

When we went to the woods I made a bow and arrow.

I got a stick that would bend.

• Then I tied a vine to each end of the stick.

I broke off a stick about a foot long.

I tried to make a sharp point.

This was my arrow.

The Garden.—Beds for the planting of seeds are measured off and planned. The children plant corn for the second-grade chickens, pumpkins to be harvested in the fall and used for Hallowe'en, and flower-seeds including sunflowers, morning-glories, petunias, and mignonette. A tree is planted on the school grounds, special trees are observed in the park, and some of them painted or drawn.

Animal Life.—The birds recognized on our walks and excursions in the park, are the robin, bluebird, blackbird, woodpecker, bluejay, yellow warbler, kinglet, flicker, and sea-gull.

A pair of ring-doves is kept in the room, and the birds are watched and cared for by the children. The following reading lesson indicates the character of this work:

DOVES

We have a pair of doves.

They are gray.

They have a little black ring around their necks.

They are ring-doves.

One day we saw two little eggs.

We saw first the mother and then the father sitting on the eggs.

In a little while we saw the baby doves.

They were very little.

They had no feathers.

They looked like yellow balls.

They could not see.

The father and mother took turns feeding them.

They grew very fast.

They were always hungry.

The mother opened her mouth.



CARING FOR THE DOVES



THE AQUARIUM WITH TABLE COVER STENCILED BY CHILDREN

Then the little doves put their bills into the mother's mouth to get their food.

Soon their little black eyes opened.

Soon they had feathers.

They could flutter their wings.

Now they are out of their nest.

They can eat seeds.

We give them water and seed.

Fish, snails, crayfish, and frog's eggs are studied in the school room. An aquarium is provided for this purpose, and its contents are under constant observation throughout the year.

Other Activities.—The play period has been utilized in digging caves in the playground, building a brush house, rolling snowballs, piling up blocks of ice for an Eskimo igloo, playing in Indian wigwams, and building a brick house and oven. These activities are in keeping with the child's powers, and they satisfy his imagination, as well as his desire for contact with real things. All of this work furnishes much material for reading, writing, and dictionary work, for which the children have come to feel a real need and interest.

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THE SECOND GRADE

All science work in second grade is social in motive. In scope it offers opportunity for the care of pets and the study of animals; for gardening and excursions; for the cooking, serving, preserving, and testing of food materials; and for numerous experiments with a variety of other materials. The science work also offers many opportunities for experience in the technique of numbers, reading, writing, spelling, manual training, and the other special arts. One big project, the care of a dozen chickens, continues throughout the school year. There are a number of shorter activities, the first one being the preparation for a school fair, including exhibits of cooking, of summer collections, and of garden-products. Another activity is the making in clay and wood of a miniature Ringling Brothers' Circus. As an aid to the modeling and painting of the animals, the children study the habits of the elephant, camel, lion, tiger, giraffe, etc., in the Lincoln Park Zoo adjacent to the school. Colonial industries are studied, when the children are planning a colonial play and party for the senior class. The experimental work with minerals, begun in the first grade, though not treated as a special unit, is nevertheless included in the solution of a number of problems. In principle, however, all the activities in second grade help to extend the scope of the experiences created during the work of the previous year. The work in detail follows.

ACTIVITY I—THE SCHOOL FAIR

The impetus given in first grade to the collecting instinct is stimulated further by the request at the end of the year that each child, during his vacation, make or collect something of interest to display at the County Fair in October. The children, therefore, return in the fall carrying packages bulging with materials ready for instant attention. Necessarily, Fair work begins at once.

(a) SUMMER COLLECTIONS—

1. Showing to grade collections of stones, shells, mounted insects, pressed flowers, sheaves of grain, walnut-hulls, sumach-heads, kodak-books, etc.
2. Drawing pictures of places visited, relating experiences, answering questions, and exchanging information.
3. Labeling exhibits and planning final disposition, as home, museum, grade use, etc.

(b) FALL HARVEST—

1. *In the garden.*—Harvesting corn, sunflowers, and pumpkins in school garden. Selecting prize plants, digging up tallest cornstalk; largest sunflower plant, and longest pumpkin-vine. Collecting curious and interesting specimens such as blighted ears of corn, cobs with undeveloped grains, tiny silky ears, undeveloped pumpkins, insect pests, etc.
2. *Class work.*—The garden work is followed by several informal group lessons, so that children may have a further chance to ask questions about their specimens and to show them to each other. The information gathered covers points something like the following:
 - Cause of fungus growth on corn.
 - How worms get inside the husks.
 - Use of corn-silk and of tassels to the plant.
 - Use of prop-roots on cornstalks, of tap-roots on pumpkin-vines.
 - Why interior of cornstalk is fibrous, while interior of sunflower head is thick and spongy.
 - Ways that insects destroy plants.
3. *Measuring the harvest.*—Husking corn with old-fashioned husking-pins; shelling and measuring corn for exhibit; seeding sunflower heads; measuring, drying, and measuring again; labeling pumpkins, for Halloween, Thanksgiving, home, etc.

(c) HOME PETS—

Finding out kind of pets children wish to exhibit and planning ways of making them comfortable.

(d) MORNING EXERCISES.

Recalling and organizing interesting experiences in garden work for grade contribution to school exercise on *Crops*.*

ACTIVITY II—CHICKEN PROJECT—FALL QUARTER

Statement of General Management. The flock each year is a new one, ordered by the children and paid for with money advanced by the school office until this indebtedness can be settled with money got from the sale of eggs. The daily work at the henhouse, for convenience and economy of time, is done through committees, children serving twice a day in groups of two. A special teacher always accompanies them, for though keen in interest, they are weak in judgment and experience.

The committee reports to the grade each day, at a short period set aside for this purpose, but whenever a problem requires a longer discussion, it is continued during the next science period, and when finally

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ttled, the task involved is again handed back to the group for execution. For example, a self-feeding hopper planned by the grade is made by a committee in manual-training time. The children love this flexibility of method. They feel their problems are important and business-like. They perform their duties with sincere pleasure and remarkable carefulness and show in many ways that their dozen hens are a cherished possession. The order of the work follows:

a) **GETTING THINGS IN ORDER FOR THE FLOCK—**

1. *At hen-house.*—Open and air house; see that proper light, sunshine, and ventilation are provided. Sweep floor, wash nest-boxes, perches, and dropping-boards with hose.* Repair articles, sprinkle lime around, and ask janitor to whitewash walls.
2. *In shed.*—Clean and air grain-bin, oil padlock, and put on new hinges if needed. Hang all tools, pails, etc., on nails provided for the purpose, and stop all mouse- or rat-holes.
3. *In runway.*—Nail grit-hopper in position. As precaution against lice, prepare a sanitary dust-bath for hens, using following formula: One pound powdered sulphur, one pound slaked lime, one bushel sifted ashes.**
4. *Experimental work.*—What is lime? Recall acid test for limestone made in first grade; apply test to oyster-shells. Make lime by heating oyster-shells or limestone. Slake some lime from barrel in chicken-shed.

What is sulphur? Taste, feel it, and burn it. Smell before and while burning. In what way is sulphur used at home?

b) **LEARNING TO SUPPLY THE NEEDS OF THE CHICKENS—**

1. *Observations.*—Recalling observations made on first-grade excursion to farm and vacation experiences in country.
2. *Food lists.*—Listing available food resources; corn, sunflower seeds, and scraps from school kitchen. Planning home contributions, such as apple peelings, cabbage and lettuce leaves, parsley and celery tops, and meat bones for grinding in bone-grinder.
3. *Writing orders.*—Learning to write orders, for bags of bran, bales of hay, bags of mixed grain, etc.
4. *Farm excursion.*—Excursion to farm for winter supply of food. A large corn shock is pushed apart, the ears hunted out, packed in bags, and the stalks left in an orderly pile for the farmer to use. Heads of cabbage are also bought for green food.
5. *Storing supplies.*—Corn is husked, tied in bundles, and hung in school attic to dry, after which it is shelled and stored in mouse-proof cans. Cabbages are buried in school garden for spring use. The

*Furniture for chicken-house is light and movable.

**For dirty work, such as sifting ashes, the children wear large aprons and a head covering. The wagon used for hauling articles was contrived by a former class and built upon a set of old baby-carriage wheels.

following reports, written for the *Parker Weekly*, describe this experience:

First we dug a hole, one yard wide and one yard deep. Then we put a box into the hole. Then we put some straw and paper in the bottom of the box, and then we put the cabbage in. Then we covered it with boards.

JACK.

* * *

It is March. If we do not dig up the cabbage before it gets warm, it will rot. So we went with Mr. Miller to where it was buried. The boards were frosted, and it was hard to dig. The cardboard was frosted, and the earth was frozen and hard. The cabbage had not rotted. The leaves are for the chickens.

MARGARET.



MODELS OF CLOSED NESTS



THE FINISHED NESTS

6. *Grit*.—Learning why chickens need grit and where to find it. Cut open a gizzard, note contents, wash and count number of stones

found. Why are there so many? Plan ways to save money by collecting sand and gravel from the lake shore, by collecting charcoal from bonfires along shore, by bringing from home clam and oyster-shells, pieces of broken dishes, dried egg-shells, etc., to be pounded up at recess time.

7. *Models.*—Planning models of self-feeding grit-hopper, closed nests and water-fountains. Discuss hoppers, nests, etc., seen on farms. Make drawings and cardboard models at home, and construct articles in shop according to plan decided upon in class.

The following is a stenographic record of a report period followed by a discussion of models for drinking-fountains.

Grade teacher (to Miss B., who superintends children's work at the hen-house). It looks today as if we had several more suggestions for water-



MODELS AND DIAGRAM OF DRINKING FOUNTAINS

(The model to the left is Margaret's, the middle one was made by George, while Justin drew the diagram on the board)

fountains. After the children read their reports, we will listen to a description of the new models.

Barbara (reading). We found four eggs, two in the corner nest and two in the closed nest. Margaret's water-pan didn't work. We looked to see if there was any straw in it, and there was much of it, right where the chickens drink. The straw had come inside where the water was, and we had to clean it out. *(Continuing orally.)* After we cleaned it out and put fresh water in, we put a box on the ground and set the water-pan on it. We did that so the straw would not get in. I should think that the people who

go out this afternoon would like to see if there is any straw in the pan.

Margaret. I don't see how the straw could get through.

Barbara. I saw it.

Jim. I will tell you how it could get in. The chickens were scratching around.

Margaret. I know it could not have gotten through the hole, because the hole is so small you can scarcely see it. It may have been in the can.

Barbara. Maybe they kicked it in.

Grade teacher. I think Margaret is right. The chickens could not kick straw into the can unless the child who filled it with water was very slow in putting the lid on. The real danger in her plan is that straw will get into the water after it flows through the hole into the open pan, and to set the fountain on a box was a good idea. Philip, will you read your report?

Philip (reading). We found a piece of brick and some sticks in the fountain. We asked the children not to throw bricks or sticks or anything in the fountain, because it might easily hit a hen and kill her. If we find any more, we will put up a sign.

Jim. They ought not to throw stones or sticks, because it might break an egg, you know.

Grade teacher. I am sorry the wire fence isn't higher. In the old runway nothing like that could happen. Of course we can put up a sign if you think it is needed.

Miss B. We ought not to put up a sign unless it is really necessary. People will think we are fussy. Jim has something more to tell.

Jim. It is important, too. You better not go down that door by the fire escape, because we tripped there yesterday and cracked a whole egg.

Grade teacher. Thank you, Jim. (*Addressing Mr. M., who has just entered the room.*) George and Justin have made some models which they wish us to see. May we use your period to hear about them? Perhaps you can help us decide upon them.

Mr. M. Certainly. I should like to stay.

Grade teacher. George, you may show your model first.

George (coming to front of room). Well, here are two pans.

Mr. M. But what are you making, a cake?

George. I am making a model of a water-fountain. I took two pie-tins and I took a can-opener, and I cut a hole so I could put a jar in and then a hole for the hen's head, and then I got another tin to put under it. Then, in the pantry, I just got the right bottle to fit in there, and then with a knife I chopped a rough place on the edge of the bottle so the water could come out. I am going to make this bigger and put more holes in it.

John B. I should think if a hen put her head through the hole there she would cut her head on the tin.

George. But this is only a model. I am going to make a better one.

Ann. If it were made out of wood it would not cut the hen.

Justin. If you made it of wood, the little pieces of wood would fall off and get into the water, and the chickens would drink them.

George. I could make it of two pieces of wood.

Justin. Then why don't they have wood pipes in the city, if the wood would not break off?

Mr. M. I will tell you something. A long time ago, in the city of Chicago, they had wood pipes in the street instead of iron pipes.

George. They would rot.

Mr. M. No, so long as there was water in them they would not rot. But the city found it was cheaper and better to use iron pipes.

Barbara. George, are you going to have glass in your real fountain?

George. Sure.

Barbara. But suppose (*touching the bottle*) it falls over and breaks?

George. But the hole is not going to be so loose.

Barbara. Don't you see that wood is lighter than glass, and that would make it fall over.

George. The real one would be bigger—it would look just li' an aeroplane.

Miss B. Mr. M., if this model were larger, do you think it would work?

Mr. M. I think it would work beautifully.

Grade teacher. George has done some good work, and I am proud of him. Justin is waiting to explain his picture.

Justin. This is a pan with a lid on it, fastened at the top to a pulley and there is a spring down here and when the chicken steps on this spring, she pushes it down and that raises the lid, and when she gets off, the lid will close down again.

Grade teacher. I once saw a grain-hopper that worked with a spring.

Mr. M. If I were a chicken and saw a spring like that, I would not get on it.

Justin. But there is going to be a board over it.

Mr. M. Oh, then there is to be a little platform, and the spring is under the platform. How high is that platform going to be from the ground?

Justin. Just as high as the spring will let it go. The spring will come up three or four inches.

Gertrude. I should think the hens might be afraid. Chickens frighten quite easily.

Justin. But the spring would not come up as quick as you think it would. It would be the right kind of spring.

Jane. She might not have enough sense.

Justin. But she would come there, and very naturally she would learn it. The hen would go there once in a while and she would get the water.

Henry. She would learn how to do that—like the closed nest. There is only one door to get in. She will learn to step on the board.

Miss B. I think a hen very soon gets accustomed to a thing of that kind.

John B. You ought not to have it up against the wall. There would be a row of chickens around, and they would get the water all at once.

Justin. If it wasn't next to the wall, it would be next to the fence.

Mr. M. Suppose there were a number of chickens standing around the fountain, and they had their heads in that place drinking and the hen on that

board should step off? What would happen then?

Justin. But they would never go there if it was crowded—they wouldn't if it once happened.

Grade teacher. Mr. M., do you think it is possible for Justin to make such a fountain?

Mr. M. I question very much whether the chickens will want to drink from that fountain. It might frighten them. I think Jane had the right idea.

Justin. But they really wouldn't know, because it would come down slowly.

Grade teacher. Do you plan to make the fountain at home or at school?

Justin. I will make it at home.

Grade teacher. If Justin will make one, we shall be glad to try it, just as we are testing Margaret's fountain now.

Kendall. Well, what if the chicken comes along here and the spring doesn't work?

Justin. But I would make it so it would work.

Kendall. Well, see here. This is one thing—people make automobiles to run, but sometimes they don't run, and it might be the same with the water fountain.

Justin. But automobiles are not made with springs and cans.

Grade teacher. I think, however, that Kendall's caution is a good one.

Justin. But every once in a while we would oil it up.

Grade teacher. The idea is certainly worth working on. Perhaps your father will help you make it.

Jim. The chickens will be happy when we get all this done.

* * *

8. *Observations on molting.*—For a week or so mount each day on paper the feathers brought in from the hen-house, noticing the color, size, shape, and number of each kind. Bring hen to class, and identify feathers on chart with feathers on hen's body. Note way feathers overlap, and compare with fish-scales. Note glossy appearance of coat. Compare with hairs on head, on hand, etc. Why is a chicken's coat glossy and oily?

Experiment.—To show that sunflower seeds contain oil, in order to understand why poultry-men feed them at molting time.

Apparatus necessary.—A test-tube fitted with a one-hole stopper and a delivery-tube; Bunsen burner.

After putting sunflower seeds in the test-tube, heat the tube in the Bunsen flame and pass the gas which comes through the delivery-tube into a bottle of water. The children see that the gas condenses and forms a dark oil which floats on the water.

Questions.—Why is it necessary for a hen to have food which contains oil? How does the oily coat protect the chicken against rain? How do canary birds behave when they are molting? Did the ring-doves in first grade molt?

WINTER QUARTER

The chickens purchased each fall are early spring pullets, so that laying may begin before Christmas, though this rarely happens. No

doubt the hens have to grow accustomed to their new home, to the noise of the playgrounds, and to the many little people who care for them. The children, however, are impatient for the fun of gathering eggs, and after molting is over are constantly asking, "Why don't the hens lay?" From various sources they learn that men who keep hens for eggs know the food-values of different grains, that they stress the importance of feeding a balanced ration, and that they keep their flocks active and contented. Experiments with grains, reading-lessons on methods of feeding, and finally egg-marketing, which by February assumes the proportion of a flourishing business, constitute this term's work with the chickens.

(A) EXPERIMENTAL PROBLEMS WITH GRAINS—

1. *To identify grains used by poultrymen.*—Display bundles of wheat, oats, buckwheat, and heads of Kaffir corn. Let each child thresh a head of wheat in his hands, blow chaff away and observe the seeds. Repeat process with oats and other grains. Which grain is easiest to thresh? What foods are made from these grains?

To find how many different grains the commercial chicken-food contains, distribute to the class a cupful of the mixed grain. Have the children sort it into piles, collect these separately, and so determine the relative amount of each kind of grain. What grain do the chickens eat in largest quantity? Of what grain do we eat the most?

2. *Testing grains for starch.*—Show laundry- and cooking-starch, and discuss uses. Let children make starch from each and starch pieces of cloth. Dry and compare results. Apply iodine test to lumps of starch and to starch solutions which have been made. Note chemical changes. Test for starch the cereals brought by children to school. Explain the effect of starchy foods on body. Is starchy food good for children? For chickens?
3. *Washing test.*—Washing-test to find which grains contain most starch and gluten. The materials used are wheat flour, rye, buckwheat flour, cornmeal and oatmeal. Divide class into groups, giving to each child a quarter of a cup of flour. Tie flour into piece of cheesecloth, and wash bag in bowl of water. Squeeze bags dry, open, and compare results. Which crumbles? Which is sticky? Which will pull? Explain what gluten is. Which grain contains most gluten? Which contains least gluten? Do our chickens need gluten?

Examine bowls of water and pour off the clear water. What remains? Pour all starch from corn-meal bowls together. Compare with results from other groups. From which grain did we get most starch? Least starch? Which grain do we feed most to chickens? Are we feeding wisely?

CORRELATED READING

F. W. Parker Leaflets on methods of threshing grains; on chicken-foods and methods of feeding, mixing hot mashcs, ways of sprouting oats, feeding to give exercise, etc.

(b) EGGS—

With great joy, the children give the first egg to the principal, and for weeks after they eagerly buy the eggs for gifts to parents and to friends. Later, accounts are opened with teachers and pupils of other grades, and at the end of each school month the class make out egg-bills, collect the money, and receipt for same. Two of the egg-bills follow.

Miss Hendry's Egg Bill for February

1 egg	\$.06
2 eggs12
3 eggs18
PAID Clerk,	
RICHARD CARTER, Second Grade Store	

Marianne's Egg Bill for April

1 egg	\$.04
2 eggs08
3 eggs12
4 eggs16
5 eggs20
6 eggs24
7 eggs28
8 eggs32
PAID Clerk,	
JANE FINN, Second Grade Store	

Eggs Gathered During Winter Quarter, 1918

January	33
February	143
March	173
Total.....	349

About this time an excursion is made to South Water Street, to watch the men candle and sort eggs, and to visit a cold-storage plant. In this way the children get a better appreciation of the value of a perfectly fresh egg and an understanding of the terms *firsts*, *seconds*, etc., as used in market quotations, which they cut out and bring to school, in order to help decide the selling price of their eggs. The following stories and poems were written this year for the *Parker Weekly*:

SOUTH WATER STREET

We went down to South Water Street. A man opened a box of lemons, to show us how they were packed. There were some very big Spanish onions. We went into the rooms where they ripen bananas. It was very hot. We saw a man looking through eggs with a strong light. We took two of our eggs, and he said they were strictly fresh. The rotten eggs were black and watery inside.

MARGARET.

THE FRESH EGG

I brought it home in my pocket. I cooked it. My mother helped me. I ate it. It was good.

JIM.

ORIGINAL POEMS

Goldie has a cosy nest,
Where she lays her eggs in rest.

* * *

When the yellow sunshine comes,
Chickens like to play,
Scratching in the ground for food,
And sometimes in the hay.

LETTER FROM A FORMER MEMBER OF SECOND GRADE

Cambridge, Mass., Mar. 16, 1918.

DEAR AUNT M.—I have 13 hens. They lay 6 to 10 eggs a day. Today I put in half a barrel of sawdust. The chickens cleaned themselves in it. In January, I got from 4 or 5 to 8 eggs a day. Some of the days when they laid 8 eggs, the weather was 10 degrees below zero. The hens are all well. I want you to tell me about the chickens at the Parker School. I am getting more eggs than any of my neighbors.

Love from,

WALLACE.

SPRING QUARTER

The culminating feature of the chicken project should be the care of the baby chicks. But the thoughtful and systematic supervision given at the hen-house during the previous terms has never been possible in the spring, and so, to insure safety to the chicks, and to prevent callousness on the part of the children, because of responsibilities inadequately performed, the entire flock, when the chicks are about a week old, is sold to children in the grade or in the school, and the chicks are sent at once to their country homes. The class, however, get much pleasure and profit from the experience of planning for the chicks and of watching them hatch.

(a) PLANNING HOW TO MAKE A SITTING HEN COMFORTABLE—

1. *The Nest*.—In class discussion, the pupils decide that the nest must be large enough for air and comfort, easy to clean, light in weight, and enclosed to keep laying hens away. Stationary receptacles for

water and grain are provided, so that hen will not get restless between children's visits.

2. *Selecting Eggs*.—This involves deciding whether we shall buy eggs or use our own; the saving of the largest and best eggs for the setting, so that chicks may be strong and healthy; and finally deciding the correct number to put under the hen.
3. *Food*.—The problems are: What constitutes the best food for a sitting hen? How often should she be taken off the nest? For how long a time should she stay off from the nest? What daily exercise should she have?

The following written* reports were made by the children to the class on their return from the chicken-house. The brief written statements were of course supplemented by oral explanations. Growth in power of expression is very evident from quarter to quarter.

FALL

- | | |
|--|-----------|
| I put a catch on the shed-door. | HENRY. |
| * * * | |
| I put the shelf up. | CARL. |
| * * * | |
| We nailed the hopper up on the fence. | JANE. |
| * * * | |
| I washed the bin. The grain and bran had come. | JIM. |
| * * * | |
| We put a roof on the nest that Peggy and Richard had nailed up in the run. | MARIANNE. |
| * * * | |
| I dug a path in the mud so the water could drain away from the shed. | JACK. |

WINTER .

We were going to hang up some celery, but it froze in the pan before we could get it out. We gave some alfalfa instead.

* * *	PEGGY.
-------	--------

One egg was in each open nest, and three in the closed nest. We gave the hens some scraps, celery and grain, grit, and an ear of corn.

* * *	JOHN M.
-------	---------

We found five eggs today. Sometimes the eggs are warm when we gather them. They are different colors. Some are brown. Some are tan colored. Some are white.

* * *	DOROTHY.
-------	----------

I found potatoes and carrots, corn-bread, meat, eggs, rice, rye and wheat-bread in the scraps.

*A list of the words that children ask for when writing their daily reports is kept studied for spelling-lessons, and the children (using their rubber-stamp outfits) print the pages of their chicken dictionaries, which they refer to when writing. Later, these words are incorporated into their individual dictionaries.

SPRING.

We hung up six ears of corn for Saturday and Sunday. We went into the shed. Suddenly we heard a big noise in the chicken-house. We went in and saw that the corn had come down and frightened the chickens. We gave them some grain, and they were all right.

MARGARET.

* * *

We got eight eggs. Goldie was on the nest. I gave the chickens some coarse grit. We need some pebbles. The children can find them on the lake shore. We saw a mouse under the bin. We think it would be a good plan to set a trap.

DOROTHY.

* * *

We scraped some black soil out of the holes in the garden to sprout oats. We planted oats in the box of soil. We want someone to water them every day. There is a leak in the roof of the shed. Somebody should mend it after school.

HENRY.

* * *

Charlotte and I set the sprouted oats down in the run. At first the chickens did not know how to eat them, but one smart hen got in the box and pulled them up by the roots.

PEGGY.

* * *

I went to the hen-house, and there were two hens in the closed nest. I patted one of them, and then I took four eggs out of the nest, so that we got seven eggs altogether. After school I went to the hen-house again, and I found one egg, so there were eight.

JANE.

* * *

We have two sitting hens now. Eleanor is the second one. We got seventeen eggs. Nick said that thirteen were laid Saturday and Sunday, and we got four this morning.

JOHN.

* * *

Eleanor has been sitting two weeks and one day. I showed her some whole corn, but she would not get off her eggs. I gave her a drink.

CHARLOTTE.



ELEANOR AND HER CHICKS

When we came out, we found that Eleanor was off her nest. We looked in the run, and there she was, all wet. Is it safe to have a sitting hen get wet and then sit on her eggs?

BARBARA.

* * *

The chicks are hatching. First I saw one little wee head stick out under the mother's wings. Then I saw two heads stick out, a little brown one and a little yellow one. One little chick said to me, "When am I going to have my lunch? Am I going to have it with the other chickens?"

M..RIANNE.

REFERENCES

Principles and Practice of Poultry Culture, J. H. Robinson.(Ginn).
Productive Poultry Husbandry, Lewis.....(Lippincott).
U. S. Government Poultry Bulletins.

ACTIVITY III—COLONIAL PLAY AND PARTY FOR SENIORS

The setting for the colonial stories is gotten largely from:

- (a) COLONIAL PICTURES.—Showing homes; ways of heating and lighting; ways of traveling; dressing; spinning and weaving.
- (b) EXPERIMENTS WITH COLONIAL ARTICLES.—Trying to warm feet over a foot-warmer filled with coals from furnace, to warm blankets with a bed-warmer, to read by candle light, to make thread from wool, to spin with spindle and distaff. Excursion to Hull-House museum, to see primitive spinning and weaving.
- (c) OBSERVATION OF COINS, DISHES, ETC.—Especially those made from copper, brass, pewter, iron, silver, and lead.

Experiments.—Casting in clay-molds pine-tree shilling souvenirs for seniors, made from broken toys, such as lead soldiers. Dyeing thread for bags to be given to mothers who helped with colonial party.*

Experiments to show colonial methods of dyeing.—Dyeing with copperas and iron salts (made from nails rusted in water and vinegar); dyeing with copperas and lye made in ash-hopper filled with hard-wood ashes.

Dyeing with burnt copperas and lye; with onion skins, maple-bark, walnut-hulls, sumach, peach-leaves, and sometimes with indigo, madder, cochineal, and aniline dyes.

CORRELATED READING

Weavers and Other Workers, by Jennie Hall.....(Rand McNally).

ACTIVITY IV—MAKING OF MINIATURE CIRCUS

The second grader who does not attend the Ringling Brothers' Circus is a rarity. Before the thrill of that experience has faded, the children's creative powers are directed toward the making in clay and wood of a miniature circus to show to the kindergarten children.

*Instead of weaving bags as usual the grade knitted for the Red Cross.



KNITTING BONNETS AND BLANKETS FOR THE RED CROSS

Dressed in improvised costumes, they tell their small auditors some daring exploits connected with the capture and taming of their trained animals, such as the camel, elephant, lion, tiger, and giraffe.

EXCURSIONS TO THE ZOO IN LINCOLN PARK—The Superintendent of the Zoo allows the class to see special feedings of the animals, and personally explains and answers questions.

In class, the children study characteristic movements, habits, ways of catching, taming, and training animals, as well as the domestic use of the elephant and camel.

CORRELATED READING

- Just So Stories, R. Kipling.... .(Doubleday)
 Jataka Tales, E. C. Babbitt(Century)
 Little Black Sambo, H. Bannerman..... (Stokes)
 Reynard, the Fox, E. L. Smythe.(Amer. Bk. Co.)

ACTIVITY V—GARDENING

Assisted by the science teacher, the class dig up, manure, and sow in oats one end of the poultry runway, which is wired off for this purpose. Next, frames, covered with a strong wire-netting, are laid over the ground, and when the sprouted oats peep well through the wires, the chickens are allowed to range. Gourd seeds are planted, to trail over the playground pavilion, and hollyhock seeds ordered from Mt Vernon are sown along the fence bordering the poultry yard.

THE THIRD GRADE

The underlying motive of the work in third grade is the beginning of the development of a civic consciousness. The problems upon which all the work of the year is based are as follows:

- I. Why did men start a settlement at this particular place?
- II. Why has that settlement grown into such a large city in so short a time?
- III. What problems did the people have to solve in changing the swamps and prairies of one hundred years ago into the city of today, and how did they meet them?
- IV. What problems are there left for us to solve today and tomorrow?

In the solution of these problems, all the subjects are so closely inter-related that it is difficult to pick out any one and say, "This is science," or "This is history." In fact, some of the material in the succeeding outline has already been published as part of an outline of work on the history of Chicago. Its repetition here is necessary to a complete outline of the work in science.

I. *Why did men start a settlement at this particular place?*

From their readings in history, the children get the fact that the primary reason for the white men settling here was because it was a common meeting-place for the various tribes of Indians who lived in the surrounding region. This at once gives rise to the question, how the Indians came to hold their councils here—a question that can be answered best by science, in the study of the physical characteristics of the country. By modeling this section of the country in the sand- or delta-table, and by using a large relief-map of the United States, the children come to some realization of the accessibility of Chicago by reason of its situation. They also note that the various waterways were used as travel routes by the Indians, French voyageurs, and fur-traders.

Within an hour's ride on the train, we have a good reproduction of some of the physical conditions that existed in Chicago when white men first settled here. Therefore, a trip to the sand-dunes of Indiana gives us one starting-point for the science work. The abundant life



A SWAMP AT THE DUNES

the swamps, both vegetable and animal, furnishes another obvious answer to the question, Why did the Indians come here? Plants, such as the wild rice, besides furnishing food for the Indians, attracted the game birds in countless numbers; and the birds, as an abundant food supply, in turn attracted the Indian hunters.

1) **FEATURES TO BE OBSERVED ON DUNE EXCURSION.**

General Character of the Region.

Character of the Vegetation.—Color and falling of foliage.

Character and Indications of Wild Life.—Birds and animals.

Character of Swamp Soil.

Seeds and Methods of Distribution.—Milkweed (air currents); acorns (water currents); burrs (animals); witch-hazel (explosive power).

Birds.—Wild ducks, wild geese, snipe, sandpipers, kingfishers, herons, loons, grebes, red-wing blackbird, yellow-headed blackbirds.

2) **SPECIMENS TO BE COLLECTED.**

Samples of Soil.—Vegetable mold, sand, clay, gravel.

Swamp Vegetation.—Rushes, cat-tails, wild rice, etc.

Dune Vegetation.—Foliage, fruits, grapes, prickly pears, cranberries. Seeds.

Animal Life in the Swamp.—Crayfish, snails, turtles, salamanders, water boatmen, larva of dragon-fly, larva of caddis-fly, minnows, etc.

3) **SUPPLEMENTARY EXCURSIONS.**

To Skokie Marsh; source of the north branch of the Chicago river; on Chicago river and branches (to give general idea of water ways in and

around Chicago); drainage canal; Illinois-Michigan canal; Chicago portage.

One large aquarium, about 5 ft. x 2 in. x 1 ft. 5 in., and several small ones, have been stocked at different times with specimens collected on the excursions.

The following reports of various trips, written by the children, show how, by means of the excursions, the interest and curiosity of the children is aroused, and a beginning is made in training the powers of observation.

OUR TRIP TO THE SAND-DUNES

We went to Millers, Indiana, Friday, October 9. We met at the school at 7:40 that morning, and went down to the LaSalle Street Station. It took us about an hour on the train to reach Millers.



GENERAL VIEW OF THE DUNES

On the way, we saw some swamps and great quantities of tumble-weed. The leaves were turning red, and brown, and gold. Many trees were still green, and many of them were pine-trees.

It was beautiful day for our trip. The sun was shining, and it was warm. We walked about a mile along the road to the lake. On the way we crossed the Calumet river. It looked very swampy.

We climbed some dunes, and found a place to put our wraps. We then started out to see what the country was like. We climbed a high dune and saw the deep blue water of the lake, swamps, and sand dunes everywhere.



FUN ON THE DUNES

We found wild grapes, colored leaves, and many different kinds of bones. Helen found a turtle's egg on the edge of the swamp. It was white and about one and one-quarter inch long. It was oblong in shape. Some of the boys saw a snake.

After lunch we started to fish. We wanted to get some things for our aquarium. Many of us had nets and the director had a dredge to use in the swamps. We caught crayfish, tadpoles, frogs, leeches, newts, rock-fish and minnows. We found the larvae of the dragon-fly. We think the dragon-fly goes through three stages, just as the butterfly does. We are



DREDGING FOR SWAMP LIFE

going to keep it through the winter and see if it will change. One of the tadpoles was a bullfrog pollywog. The other, we think, will change to a green frog with gold buttons. We caught two kinds of snails. One was an oval oblong, and the other a flat coil. We caught whirligigs, water-boatmen, larvae of the May fly, and water-beetles. We also found four kinds of water-weeds. There was some wild rice in the swamp. Along the edge of the swamp we found gentians, the bottle gentian and the fringed gentian. Along the road we found prickly pear and witch-hazel. The witch-hazel had its flower and fruit on at the same time.

We started home at 3:15, and had a very good time that day.

CLARK ROAD

We went to Clark Road. We took the Illinois Central and then changed to the electric car at Pullman. Clark Road is about two miles west of the lake, and southeast of Gary. We followed the road for a short distance when we got off the cars, and then turned north into the woods. We saw some alder-trees on the way. We went to get insects for our aquarium, but the swamps were dried up. We had a good day for our excursion. The air was cool and the sky was gray. It was a good day for walking. Clark Road is very different from Millers. There are no sand-dunes there, but there are ridges and swamps, and swamps and ridges.

RIDGES

The ridges seemed to be all sand. We could see that where the railroad cut through. On top of the ridge the soil was black. We wondered how that happened. The trees were mostly oaks. The leaves were a deep red. Some were orange colored and some brown. We brought back many acorns. The second grade can use them to make acorn flour. Some of the beautiful green moss we gave to the seventh grade. We found some prickly pears. We brought back some of the fruit. The golden-rod seeds were just ready to fly. We saw some milk weed seeds, too. We found horsemint, wintergreen, witch-hazel, rose-hips, false indigo, bird's-foot violets in bloom and blazing-star on the ridges. We saw two bee-trees that had been cut down for honey.

SWAMPS

In the swamps we found swamp-reed and some wild rice stalks. They both grow ten or more feet high. There were many cattails, and we picked some.

The wind blew the seeds about in the air, and it looked as if it were snowing. The button-bush grows along the edge of the swamps. We brought back two birds' nests that we found on the button-bush. One nest had a soft lining. It looks as if a little field mouse had made it. We found several cocoons. They were the cocoons of the *Promethea* moth. We brought back some swamp soil. It was very black and fertile looking. We are going to try to find out why the swamp soil is so different from the ridge soil.



ON THE RETURN TRIP

We did not get insects for our aquarium, but we found out many things about plants in the swamps and on the ridges, and had a very nice trip.

R. H. and M. P.

THE CADDIS-LARVA

The caddis-larva has a little house around him. Sometimes his house is made of plant-stems and hollow seeds, and sometimes little stones. When his house is made of plant stems or hollow reeds, he lives in a swamp, but when his house is made of little stones, he lives in swift-flowing streams. When he lives in swift-flowing streams, he cannot swim much, but the things he eats come with the stream.

The inside of his house is very soft. He has two or three hooks at the end of his body, and he hooks himself in. The caddis-larva eats smaller animals than he, and he is so juicy that fish like to eat him, and that is the reason he makes a house around himself. A hollow reed is not so good as a plant stem, because the plant stem hurts the fish's mouth.

M. P

A TRIP TO SKOKIE MARSH IN MAY

Winthrop caught some leeches. We found many small crayfish. We caught some whirligigs in a small net at the surface of the water. We found many small oval oblong snails. We found fresh water shrimps. We found the larva of the caddis-fly. We heard and saw frogs. We saw red-winged blackbirds, a sora rail, and a meadow lark. We saw a scarlet tanager, red-headed woodpeckers, bluebirds, robins, and bluejays. We saw several garter-snakes. We picked spring-beauties, marsh-marigolds, a few purple and dog-toothed violets, hepaticas and skunk-cabbages.

G. C.

LEECHES

The leech has a little pad at each end of its body, which is used for sucking blood. Years ago doctors used leeches to draw blood from people who were sick. Occasionally they are now used to draw blood from bruised or discolored places, like a black eye.

Leeches swim with a wave-like motion. To get around the aquarium without swimming, a leech fastens its pad at one end of the body to the side of the aquarium, stretches out, circling the loose end of its body about until it finds a place to fasten it, then it loosens the first end and again seeks a place for the loose end.

W. C.

OUR AQUARIA

In one aquarium we have some newts and snails. The snails have hatched some eggs. In another aquarium we have a mud puppy. One of the boys caught it in Geneva. In another aquarium we have a large, white French snail. French people like to eat them. Mrs. Carley gave him some lettuce, and he ate nearly all of it. He has now begun to hibernate for the winter. In another aquarium we have some medicine leeches, and they are hibernating for the winter and are under the sand. In another aquarium, we have a catfish, and he is growing. In our big aquarium we have goldfish, silver-fish, and minnows. On the other side of the glass partition, we have a turtle, some small frogs, and a bullfrog, but we think the little frogs are under the sand. In a pan, we have an alligator. Virginia sent it to us from Florida.

O. T.

OUR BULLFROG

Our bullfrog has not eaten all winter long. Last week I brought a little frog to school. We put him in the aquarium with the big bullfrog. Mr. Meyers came in to look at the aquarium, and he said to the bullfrog, "It's about time you were eating something, old fellow." And the bullfrog grabbed the little frog by the leg and swallowed him before Mrs. Carley could stop him. He pushed him into his mouth with his front paws. We think now that the little frogs which we thought were hibernating were eaten up. Today Mrs. Carley put a piece of meat on a thread and fastened it to the top of the aquarium. It fell into the water. When Mrs. Carley tried to pick it up, the bullfrog grabbed her finger and wouldn't let go. Then he grabbed the meat and swallowed it. It is easy to feed him now, with the meat on a thread, as he just pulls it off.

H. A.

The dune excursion gives a physical setting. From this follows the study of Indians' homes and industries—cooking, hunting, fishing. The result of the trapping and hunting of the Indians was a wealth of furs, which led to the coming of the fur-traders and the establishment of a trading-post and fort.

STUDY OF ANIMALS CONCERNED IN FUR-TRADING

(a) Homes.—Food and covering; their relation to us (beaver, muskrat, lynx, badger, bear, wolf, otter, mink, skunk, fox, squirrel).

(b) Comparison and functions of teeth of various types of animals.—Incisors, canine teeth, molars.

In taking up the study of the animals hunted and trapped for their furs, after a general discussion, each child is allowed to select one animal for intensive study. Numerous books are available in the room, and on the blackboard is posted a schedule of definite references to books, chapters, and pages dealing with each animal. So the children are able to do a great deal of individual work and find considerable pleasure in learning of the homes, habits, and characteristics of the particular animal in which each is interested. Information gained in this way, is supplemented by frequent visits to the Lincoln Park Zoo, where the living animals are studied and sketched, and by the study of specimens in the Academy of Sciences.

Another helpful feature has been the exhibit of furs (some skins and some made-up pieces) loaned by Marshall Field & Co. at various times. The children learn to distinguish the different furs and develop a real interest in the study. The heroic side of the life of the fur-traders and trappers, their courage and cheerfulness in hardship and danger, their resourcefulness in meeting difficulties, furnishes an appeal that quickly arouses and holds the children's interest.

II. *Why has Chicago's growth been so rapid?*

(a) Modeling in Sand-Table.—(To show importance of Chicago geographically).

(b) Relief Maps of Region of Great Lakes and of the United States.—Routes of French to Chicago; routes to Gulf of Mexico.

(c) Pioneer Transportation and Reasons for Coming West.—Possibilities of western country; pictures of New England farms and Mississippi valley farms, contrast; routes of travel in pioneer days; methods of travel by prairie schooners, ox-carts, sledges, flatboats, pack-horses. What utensils did they bring with them? What kind of men were they? Map of United States, showing water routes and mountain trails used.

(d) Modern Transportation.—Chicago's importance as a railroad center; Illinois tunnel.

(e) Industries.—Industrial life involved in supplying our needs; raw material and sources—how prepared by us; river excursion to view industries; grain elevators; lumber yards; manufacturing districts; lighthouse and life-saving station; relation of Chicago river to Chicago portage (Des Plaines river and Illinois river).

(f) *Imaginary Trips with Francis W. Parker Fast Freight.*—Stock-car taken to Texas Ranch for cattle; returns to Stock Yards; refrigerator-car to carry fresh meat east; coal-car trip to Illinois coal mine; box-car to Minnesota for grain and flour; furniture-car to Michigan for furniture.

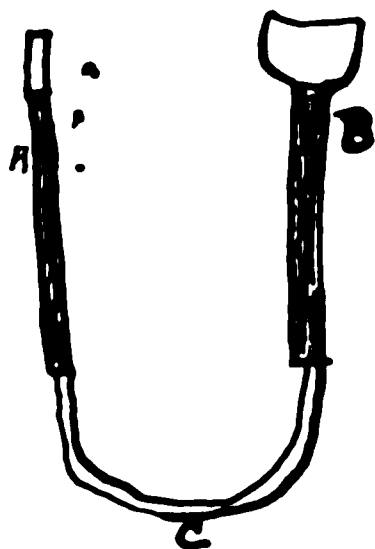
III. *What civic problems arose in the development of the city?*

(a) *Water Supply.*—Different methods used to obtain pure water; water-tower (experiment to show that water seeks its own level); purifying water (experiment showing distillation of water); visit to pumping-station and crib.

PURIFYING SALT WATER

We tried to purify salt water. Charles suggested boiling the salt water. We did this, but it did not purify it, because it left the salt in the beaker, and the water evaporated. Then some one said, "Strain it." We strained it with filter paper, but that only got it clear. It still tasted very salty. Winthrop said to catch the steam. So we took a saucer and held it over the beaker. The vapor gathered on the saucer. As the saucer was cool, the steam turned into water. The water was pure.

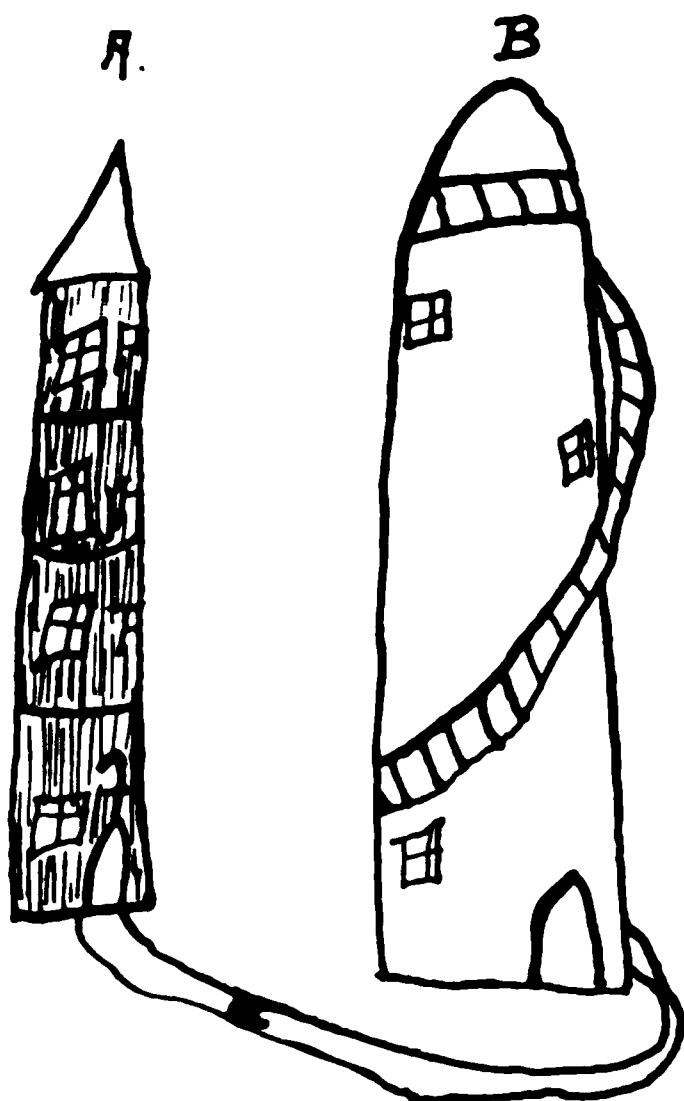
*Water always
seeks its own
level*



B. Water Tower .

A. Four story House

C. Underground pipe

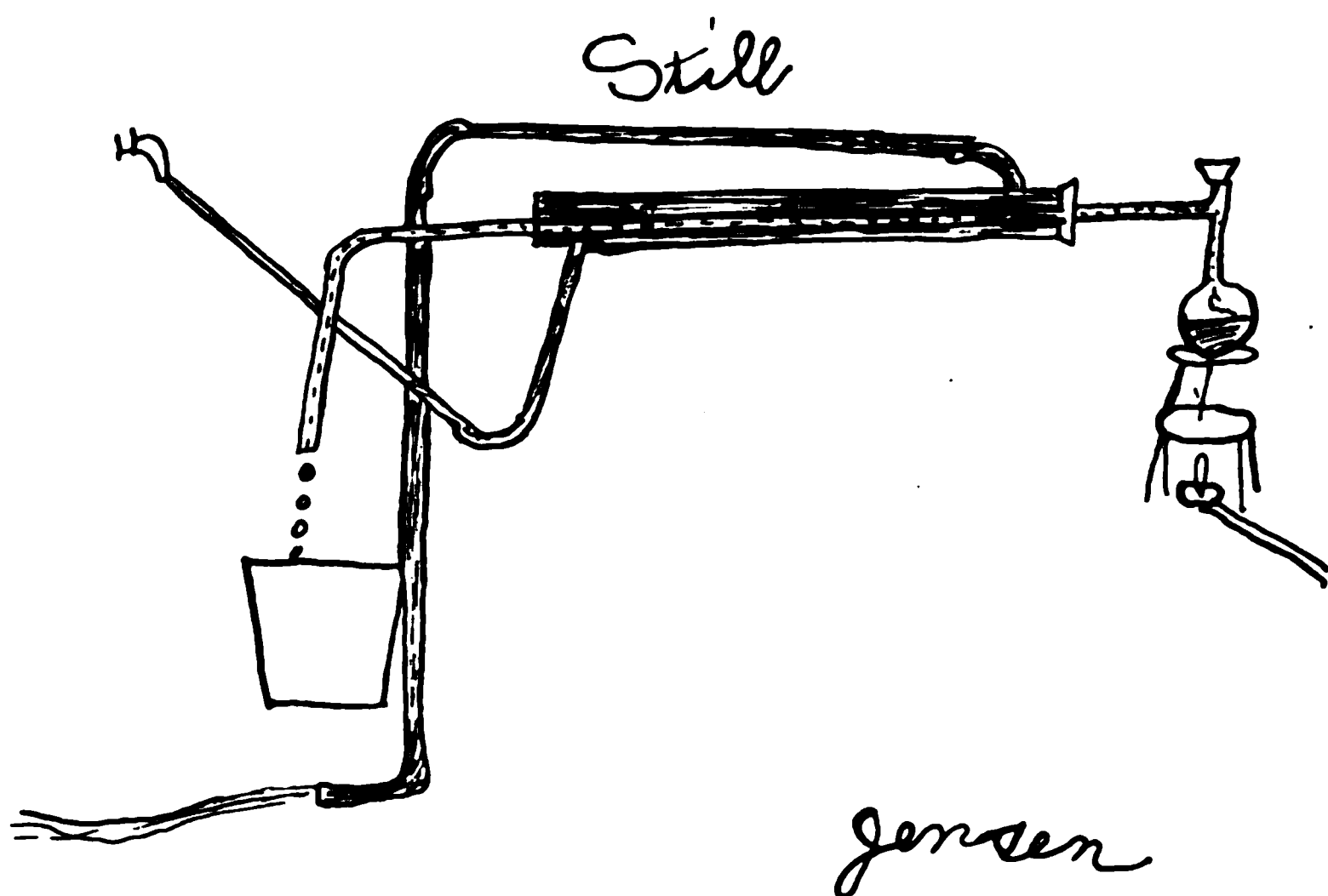


CHILD'S DIAGRAM OF CITY WATER SYSTEM

(b) *Street Problems.*—Drainage (lifting Chicago out of the mud).

(c) *Illumination.*—Candle-making, dips and molds; candles made of paraffin, spermacetti, wax, tallow, bayberry, and tested for illuminating value.

Experiment.—Heating soft coal in clay pipe, collecting the gas and observing the oily tar and residue of coke.



CHILD'S DRAWING OF A STILL

(d) Harbor Problems.—Current of lake; necessity for piers, government piers, and light-houses.

IV. *What are some of the present and future needs of Chicago?*

- (a) More Playgrounds.
- (b) Electrification of Railroads.
- (c) Better Roads.—Completion of Boulevard System.
- (d) Adequate Harbor.
- (e) Adequate Market Facilities.
- (f) Subway.
- (g) Reforming Municipal System.

V. *Miscellaneous Topics.*

(a) Study of Rivers.—Experiments with water running on sand in delta-table to show formation of gullies and of V-valleys.

Source of river; shape of basin; tributaries; canyons; flood-plains; deltas; use of river to man, animals, and vegetation.

(b) Study of Underground Water in Connection with Wells.

(c) Study of Soil.—Sand; gravel; clay; loam; relation of soil to garden.

(d) Harvesting Garden Crop.—Employment of farmer; employment of farmer's wife; preservation of foods for winter; comparison of wild and cultivated foods.

(e) Study of Type Trees.—Oak, elm, pine, maple, poplar. Uses of sap, maple syrup and turpentine. Uses of wood; strength tests.

(f) Weather Record.—Prevailing wind learned as result of daily observations.

(g) Sunshine Chart.—Monthly summary of chart is made, and daily painting typical of the month is kept as a record.

April Sunshine Chart

Fair Days = $1 + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + 1 + \frac{1}{2} + 1 + \frac{1}{2} + \frac{1}{2} + 1 + 1 + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + 1 + 1 + \frac{1}{2}$
 $= 13\frac{1}{2}$

Cloudy Days = $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$
 $= 9\frac{1}{2}$

Rainy Days = $\frac{1}{2} + \frac{1}{2} + 1 + \frac{1}{2} = 2\frac{1}{2}$

Clear Days = $\frac{1}{2} + \frac{1}{2} = 1$

The average temp. for the first week is 46 the average temp for the second week is $42\frac{1}{2}$ for the third is $40\frac{1}{2}$ for the fourth is

1.

$$\begin{array}{r} 38 \\ 35 \\ 43 \\ 35 \\ 49 \\ \hline 5200 \\ 40 \end{array}$$

2.

$$\begin{array}{r} 40 \\ 39 \\ 46 \\ 40 \\ 49 \\ \hline 5214 \\ 42\frac{1}{2} \end{array}$$

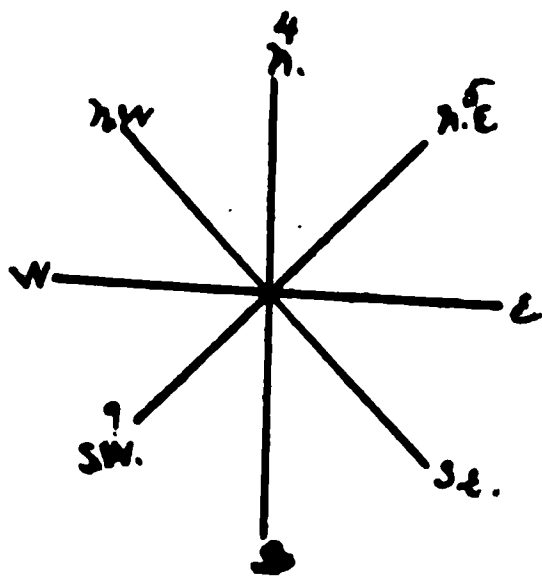
3.

$$\begin{array}{r} 46 \\ 39 \\ 32 \\ 42 \\ 43 \\ \hline 5202 \\ 40\frac{1}{2} \end{array}$$

4.

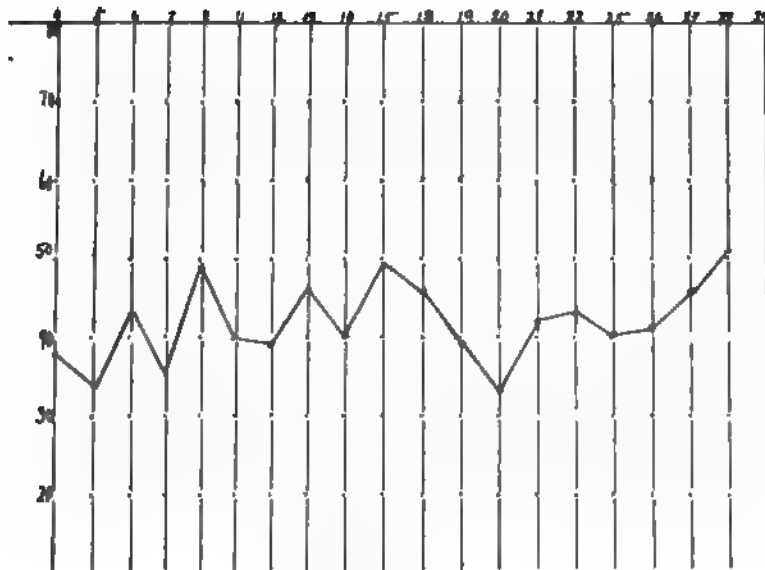
$$\begin{array}{r} 40 \\ 41 \\ 46 \\ 51 \\ \hline 5224 \\ 49\frac{1}{2} \end{array}$$

The average temp for the month is 42

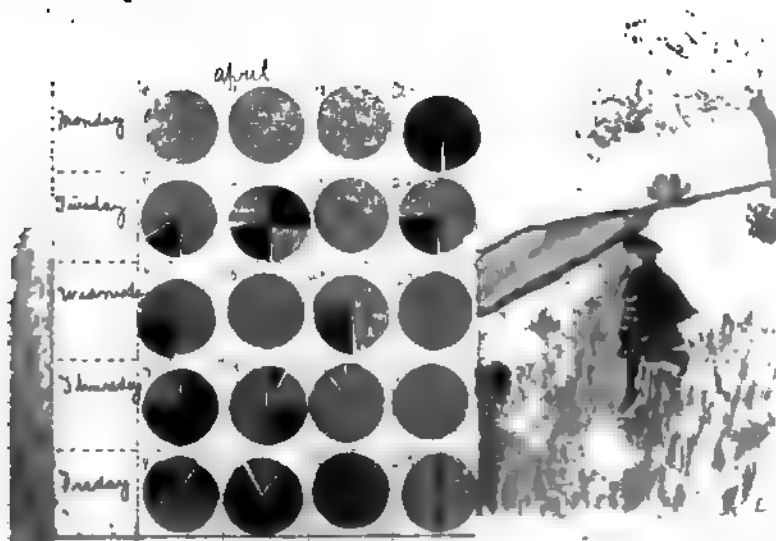


The wind we have had the most of since Jan. is the S.W. wind

THE APRIL SUNSHINE CHART



THE TEMPERATURE GRAPH FOR APRIL



SUMMARY OF WEATHER RECORD

THE FOURTH GRADE

The fourth grade marks the beginning of a renaissance, as it were, for the normal child. There come, upon his mental and spiritual horizon at the age of nine and ten, the dim outlines of a new vision. World consciousness is taking form. Because of this consciousness, there is a desire to stretch out—figuratively speaking, with both hands and feet—to get in touch with something new. To feed and strengthen these yearnings, in which lies so much mental and spiritual force, if but shaped aright, is the purpose of the fourth-grade curriculum.

For this reason, Greek history, with its wealth of beauty in art, literature, and government, and world geography, with its multitudinous avenues of information, are made in this school vital parts of the year's work. The more immediate need of expansive fellowship is met by the school garden and grade pets. Reading, writing, literature, English, arithmetic, art, clay, manual training, and eurythmics, are all closely correlated with these major interests.

Geography, gardening, and the care of pets, are the studies which legitimately comprise the science work during the year. As much of this study as is possible is made concrete through personal experience in experimentation. It is with the experimental phase only of the science work that this outline deals. The other phase, that gained from second-hand information, is outlined very briefly. This experimental work is so closely interwoven with the other work of the curriculum that to formulate it into a detached outline, as is here presented, is to give a somewhat false impression. It is as if one were to pluck the aigrettes from the heron, and, holding them forth, to say: "Behold the plumage of this bird."

However, such an outline will arrange itself under the three divisions:

- I. Problems arising from world geography.
- II. Problems arising from the making of a grade garden.
- III. Problems arising from the care of pets.

GEOGRAPHY

No textbook is used in the geography work of this grade. All information necessary is gained from reference books. (See list at end

of article.) Imaginary journeys in search of food furnish the motive for study. Cacao and meat are the two types selected,—they are taken because of their direct appeal and their wide application. Through cacao the tropical regions are covered, and through meat the temperate and arctic. Physical, locational, mathematical and anthropo-geographic points may well be developed from these two seemingly inadequate types. A large, loose-leafed notebook, of rough gray paper, is made by each child. This is the *Travel Book*, and in it are kept records of the trips, such as maps, time-tables, pictures of railroads, ships, peoples, homes, products, etc.

The first journey starts with the search for cacao. Preparations are made for the trip from Chicago to New York. The Great White Fleet steamer is used from New York to Jamaica. Observations are noted along the route and after arrival. A day's visit to a cacao plantation in Jamaica is made. Full observations of the planting, growth, gathering, and preparing for shipment of the cacao beans are noted. At this point a real trip is taken to the Garfield Park Conservatory, to see a real cacao-tree. A second real trip is then taken to the Bunte candy factory, where are seen the full processes of making cocoa and chocolate. The amount of cacao beans used by this factory raises the question, "Does Jamaica supply the world with cacao?" Other regions similar to Jamaica in climate are searched for. The journey lengthens out through the Panama Canal, to Ecuador, across the Andes, down the Amazon, across the Atlantic, through central Africa, across the Indian ocean to southeastern Asia and the East Indies. Position, climate, surface, differing products, people, and routes of travel, are all developed through this study. Several actual trips are taken to the Lincoln Park Zoo to see the animals that are met with on the journeys.

Several big questions arise in this work that only the laboratory can answer adequately. The following pages give the questions and the laboratory work involved:

In the journey from New York to Jamaica, a child asked, "If we are out of sight of land, how does the captain know the directions?" A second pupil answered, "The compass tells him." The first child replied, "But what is the compass, really?"

Experiments.—The Compass.—Magnetizing a needle and floating it on water. Observing the direction which a suspended magnetized bar takes. Making a simple electro-magnet. Noting effect of electric current on the compass. Using the compass to find directions in the room. Noting effect of iron in the room on the compass. Locating magnetic poles on world-map.

Having arrived at Jamaica, a pupil asked, "Why is it warmer here than in Chicago?" A second child answered, "Jamaica is nearer the equator." But the first child retorted, "I don't see what that has to do with it, besides, I don't see why there are summer and winter anyway—the sun is shining just the same."

The work done to answer this question is given here in rather full detail, since its solving took many weeks and proved to have some rather wide correlations.

Experiment.—Changing Seasons and Light Distribution.—The school room was darkened, and with a globe, a stereopticon spot-light, a twilight circle, and a yardstick, the differing positions of the earth, with relation to the vertical ray of the sun, were worked out. The distribution of light, with the varying length of day and night, was observed.

Several lessons were devoted to the summing up of the results of this experiment. Drawings were made of the earth in its different positions. Names were given to the four important positions: spring, summer, autumn, winter. The words *solstice* and *equinox* were introduced.

Then the question was asked by the teacher, "You have *made the statement* that the vertical ray from the sun does strike the earth at different places during the year. How can you *prove* that this vertical ray does change?" From the discussion that followed, it was discovered that shadows changed length and direction with changing position of the light; hence, difference in the length of shadows would prove the changing position of the vertical ray. Thereupon, it was decided that a shadow-record be kept. The plans for a shadow-board were worked out by the class, and the board was made in the manual-training shop by one member of the class.

It was then found necessary to find true north on the school grounds, so that the board could be rightly placed—also, it was necessary to know the difference between standard and sun noon, as the shadows were to be measured at 9 A. M., noon, and 3:00 P. M. Accordingly, each child, with a pin, a piece of paper, and a sharp pencil, recorded the shadows of the pin from 11:30 A. M. to 12:20 P. M. This work was done on long tables in the school garden. True north was found by the shortest shadow; the difference between the time indicated by the watch, at the taking of this shadow, and of true noon, gave the difference in minutes between standard and sun time. True north was compared with compass north, and the magnetic declination of Chicago was found.



FINDING TRUE NORTH

The shadow-board was placed according to directions, and records of the shadows at 9:00 A. M., noon, and 3:00 P. M., were made Mondays, Wednesdays, and Fridays on the paper plates.

The question then developed: If we can prove that the length of a shadow really changes in Chicago, how can we get evidence that it is at the same time changing in other places? The following stenographic report of the lesson shows the result of this inquiry.

CLASS LESSON

January 16, 1918

Teacher. We worked out a very satisfactory explanation for ourselves as to the cause of winter and summer; that is, satisfactory to most of us. A few were absent and may not understand it. Can anyone give, in a very few words, just what the cause of our winter and summer is?

Parke. Well, in winter the axis, you know, is just opposite in the south to what it is in the north, when they have summer down there. That is because *(goes to the board and draws a diagram)*, here is the sun, and here is the earth, and there is the axis, and you see, there is North America. And here, the direct ray of the sun hits the southernmost part of the earth—that is, throwing most of the light and heat towards the southern part of the earth. That leaves the north without so much heat. Here the direct ray hits the Tropic of Capricorn.

Teacher. Can you tell, then, where the sun's rays are hitting the earth directly now?

Parke. Near the Tropic of Capricorn.

Teacher. Then, what season are they having there?

Parke. They are having summer there, and here in the northern hemisphere we are having winter.

Teacher. Then let us take six months later.

Parke. It would be summer here, and the sun would be shining more on the northern hemisphere.

Teacher. And what causes the difference?

Parke. In the winter, in the northern hemisphere, the axis of the earth is inclined away from the sun. The north pole is inclined away from the sun, and the south pole is toward the sun.

Teacher. Some, not believing what Parke has said, might say this: "How can you prove to me that the vertical ray does change its position, as Parke has said it does?"

Eugene. By a drawing.

Teacher. That would explain, but not prove.

Marion. I suppose most people would think the axis pointed in the same direction. You would have to show that by going around the sun, keeping the axis pointing the same way, using something to represent the sun and something else to represent the earth.

Teacher. That would be an illustration, not a proof.

Marion. We could use the shadow-plate.

Teacher. How would that prove it?

Marion. The shadow would show the way the direct ray moves.

Teacher. But we've got to have a definite proof that the shadow actually changes its position in the south as well as the north.

Eugene. We could take a shadow-plate and ask someone to tell what it was on the same day in some other country.

Teacher. How could we get a shadow-record that would represent, say, the southern solstice?

Marion. If we could get word from that place. I don't see just how we can do it.

Eugene. Send a letter to one of the men who takes care of the weather, and see what the weather is down there, and ask them to record it on a piece of paper or something, and then in a month send it to us because we are studying about it.

Teacher. That suggestion is excellent. But has anybody a criticism about using the weather-man?

Jane. My father learns about things by calling up *The Chicago Tribune*, because they know most of the things like that—because they know the weather-men at different places.

Teacher. That would be still getting the news from the weather-man. Is there any place where people might be interested in what we are doing?

John. I know some people in California.

Nancy. My aunt lives down in Houston, and if I wrote a letter to her, she could find out for us. We could send a night letter.

Richard. Why couldn't we write to some schools some place and tell them what we are doing, and ask them to make a shadow-record and send it to us?

Teacher. Excellent suggestion. Those boys and girls might be just as much interested in recording the shadow as you are. If we could get in communication with some schools, what are the places that we should hear from, if we are going to get the real proof?

Austin. I think we ought to send to Venezuela, or to Argentine.

Teacher. Why would you select a place down there?

Austin. Because it is south of the Tropic of Capricorn.

Teacher. Let us make a list of the these places (*writes on the board as pupils suggest*).

Benny. One at the Tropic of Capricorn.

Pauline. At the equator.

Letha. At the Tropic of Cancer.

Howard. Between the Tropic of Cancer and the equator.

Alice. North of the Tropic of Cancer.

Florence. That could be here in Chicago.

Teacher. Very good. Now what shall we do to get cities on these important lines?

Alice. Use our maps. (*Many hands up approved the suggestion. Longman's School Atlas opened.*)

Teacher. What map shall we use first?

James. North America.

Teacher. Who can give us the page in the *Atlas*?

Carl. On page 9.

Teacher. How can you recognize the Tropic of Cancer?

Parke. By the dotted line. It goes through Cuba and Mexico and quite close to San Domingo.

Teacher. Cuba is one island in what big group of islands?

Nancy. The West Indies.

Teacher. Is there any large city in the West Indies that we might get into communication with?

Parke. Havana, in Cuba.

Teacher. Now for a city on the equator. Does the equator pass through North America?

Miriam. No, through South America.

Teacher. Who can give us the page for the map of South America?

Jane. Page 18.

Teacher. How can we recognize the equator on the map?

Richard. There is a line.

Teacher. What kind of line?

Pauline. Continuous.

Frederick. On the left hand side of the line it says "Equator."

Teacher. Follow this line with your finger across the map, and see if you can find some city that it would be easy to get in communication with.

James. Quito.

Teacher. I must tell you about Quito. It is way up in the mountains. It is very difficult to get to Quito. Isn't there some city on the eastern coast?

John. Para, in Brazil—just a little south of the equator.

Teacher. Now for the fourth city, near the Tropic of Capricorn.

Elizabeth. Santiago.

Teacher. Suppose we continue on the eastern coast of South America, because it is easier to get into communication with places on that side, and the only cities that would be willing to do this work would be large cities. How are the large cities marked on the map?

Miriam. They have a little square.

Alice. And large print.

Teacher. Who has a city near the Tropic of Capricorn?

Warwick. Rio de Janeiro.

Teacher. Locate Rio.

Warwick. Southeastern Brazil.

Teacher. We must have five places, you said. We have Chicago, north of the Tropic of Cancer; Havana, on the Tropic of Cancer; Para, on the equator; Rio, on the Tropic of Capricorn; and now we must have a city as far south of the Tropic of Capricorn as Chicago is north of the Tropic of Cancer.

Frederick. Buenos Aires, in northeastern Argentine.

Teacher. If we can get a shadow-plate record from each one of these cities, and compare their shadows on the same day with our shadow on that day, would we have a proof that no one could question?

John. Yes.

Teacher. What do you think our next step should be?

Alice. Write a letter and get the name of the head of education in these towns if we can.

Teacher. We will proceed tomorrow, then, to organize some plan by which we can get these letters started as soon as possible.

Several English lessons were devoted to the compiling of the letter to be sent. The following is the letter:

February 26, 1918.

Superintendent of Schools, Para,
State of Para, Brazil.

Dear Sir:

We, the Fourth Grade of the Francis W. Parker School, are studying about the revolution of the earth. We want to prove that the direct ray does change its position. We think we can prove it with your help. We have made a shadow-board and are going to keep a record of the direction of the shadow here. If we could get such a record from Para, we could see the difference in the direction of the shadow.

The shadow-board is 18 inches square and 1 inch thick; it has a stick 2 inches long and $\frac{1}{4}$ inch in diameter, standing up in the middle of the board.

We have cut manila paper 18 inches square with a hole $\frac{3}{8}$ inch in diameter in the center. We slip this paper over the stick on to the board. Then, on this paper, we mark the shadows Mondays, Wednesdays, and

Fridays, at 9 A. M.; noon; and 3. P. M. On each line we mark the date and time. When the paper is full of lines we put on a new sheet.

If some school in Para could keep a record for March, April, and May, and send us the record at the end of each month, we would then have some *real* information about the changing of the sun's position. We should be very glad to send our records if you cared to have them.

Hoping, very much indeed, that one of your schools may be able to help us, we remain

Yours sincerely,

FOURTH GRADE.

Copies of this letter were sent to Havana, Cuba; Kingston, Jamaica; Para and Rio de Janeiro, Brazil; Buenos Aires, Argentine. Three replies have been received at the writing of this report. The results of the experiment are eagerly awaited.

The manual-training teacher followed up this shadow-work with the making of pocket sun-dials and various contrivances for telling time. His report of the problem follows.

A STUDY OF TIMEKEEPING DEVICES

In connection with the science and geography work of the fourth grade some time in the shop was devoted by the boys of the grade to a study of timekeepers.

The movement of the earth about the sun with the attention on the lengthening of the shadow cast by the sun could not very well be discussed without some reference to the use which has been made of this fact in various times and by various peoples as a means of telling time. This gave us a point of departure and reference was made to the use of the sun-dial in our own country in colonial days. The comparison between the present and the past, between the watches and the clocks of today and the methods of earlier times offered a very profitable field for investigation and study.

In the discussion which arose it was found that nearly all of the boys knew about sun-dials. The sun-dial on the school grounds was familiar to all, and many had seen such primitive clocks in other places. The fact that in the time of Washington the sun-dial was still the common means of telling time was a fact which one of the pupils brought out through information which he had gathered in his reading. In Roosevelt's *Winning of the West* was found a picture of a pocket sun-dial such as Washington probably carried when on his sur-

veying trips. An attempt was made to duplicate this, and each of the boys made one and tested it and found it would tell time approximately correctly. Comparison of the sun-dial with the watches and clocks of today brought out the fact that while watches would tell time equally well, no matter where the watch might be, it was not so with the sun-dials, which must be made for a definite latitude. The dial could be used to tell time at any point on an east and west line, but carrying it farther north or south of the given latitude would destroy its usefulness. No attempt was made to go into the reasons for this in detail, merely calling attention to the fact that the nearer the equator a person happened to be at certain times of the year, the more nearly would the sun be directly overhead. This would necessitate a difference in the slant of the gnomon or pointer of the sun-dial, and the angle of the gnomon would be the same as the latitude of the place where the dial was to be used. This meant looking up the latitude of Chicago, which was found by consulting an atlas in the library.

Attention was called to the fact that experts were needed at the time sun-dials were in common use, who could lay out very accurately the various angles needed, and that these men were called *dialers* and held a position similar to our watchmakers of today.

Other forms of timekeepers discussed, to most of which the pupils had found reference in their reading, were: time-candles; tarred string which was knotted at intervals, these intervals marking the time when the string was lighted or slowly smoldered; hour glasses; and water-clocks. A list of these was made and certain of the pupils volunteered to make some of the forms discussed.

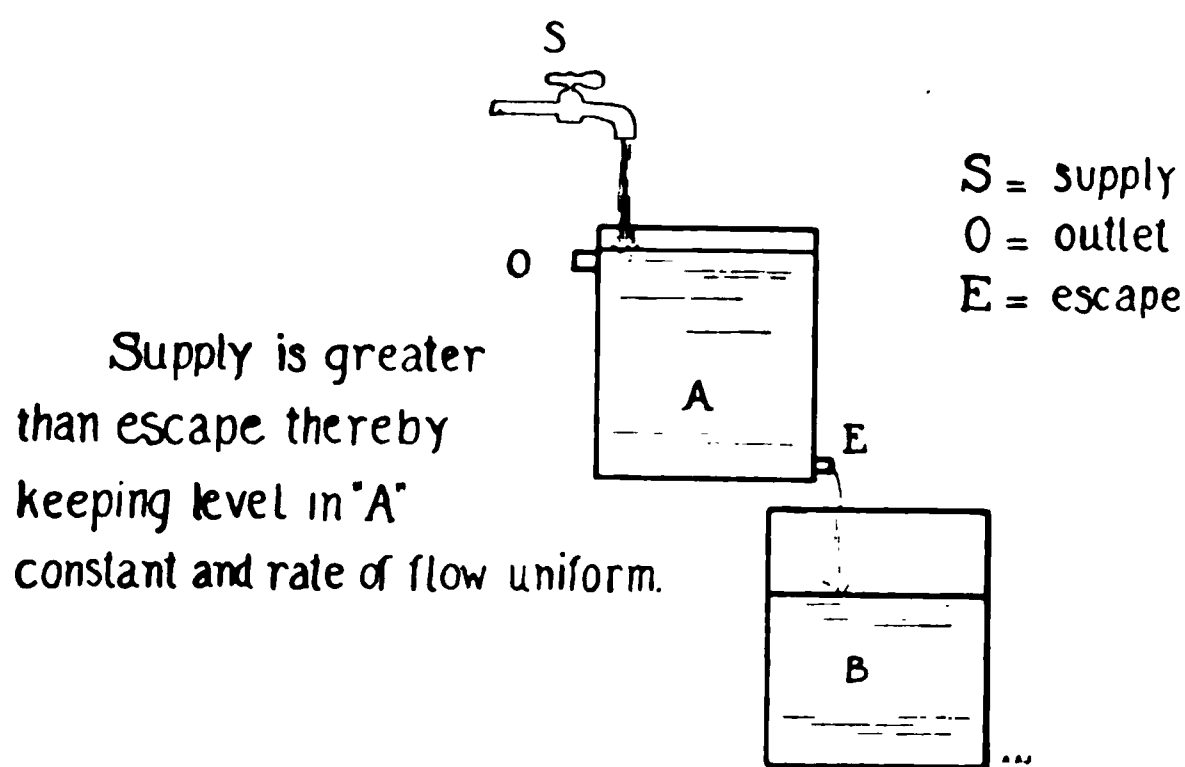
The water-clock offered an opportunity to trace the evolution of our modern clock and also provided a field for invention on the part of the class in the realm of physics and mechanics. A brief description of the method by which this was worked out might prove of interest.

1. The Malay islanders used a cocoanut shell to tell time. This had a very small hole in it and when it was placed in a vessel of water it gradually filled and sank, thus marking an interval of time. It was then emptied and set afloat again. Here the science involved was that of water pressure. An interesting class discussion as to the rate at which it would fill ensued, some pupils contending that as the cocoanut filled with water, the speed with which it sank would be increased, owing to the increased amount of water which it contained. The fact that the water which entered the cocoanut when it was nearly full

would have to push against all the water which it then contained meant that the rate at which it filled would be slowed down. When the coconut was first put to float, the water entering the empty shell would merely have to displace the air and would therefore enter more readily. This would also be increased by the added weight of the shell, which at that time was considerably above water. This weight, bearing down on the surface of the water, would naturally become less as the shell became submerged in the water. These were facts which various pupils brought out in the discussion, and which one boy proved to his satisfaction by making an experiment.

2. The Hindus improved upon this by using a copper bowl. The shape was similar to that of the coconut, but the added advantage lay in the fact that bowls could all be made uniform, so that a standard unit could be preserved by several people. The same objection as in the case of the coconut shell still held true: namely, that the irregular shape of the vessel and the lack of a uniform rate made it impossible to divide the unit into equal periods of measurement.

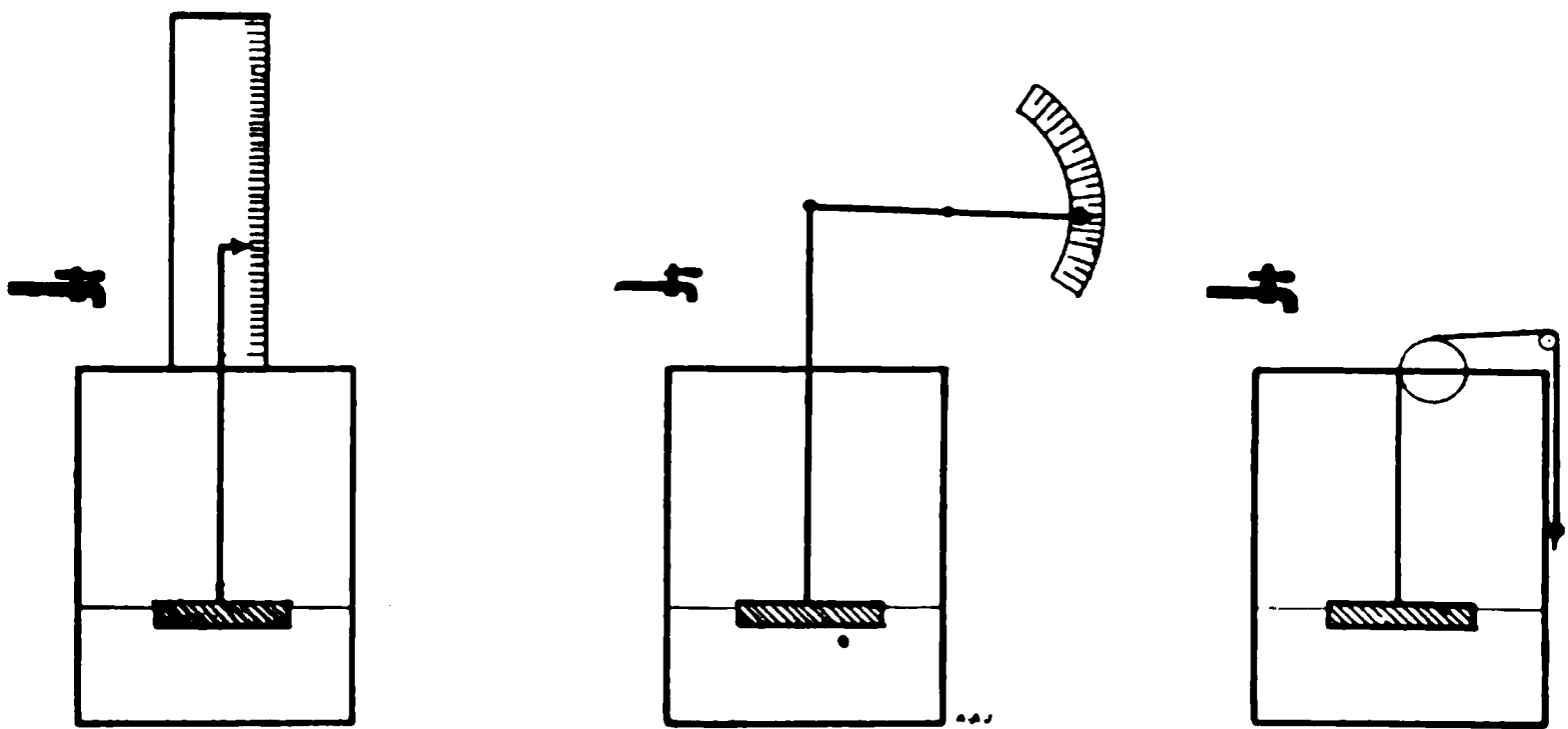
3. The Chinese water-clock was an improvement upon these two methods in that the vessel was cylindrical so that, by placing one vessel above the other and allowing the water from the first to flow into the second at a constant rate of speed, it was possible to divide the straight sides of the cylinder into as many equal parts as desired and thus mark off uniform divisions of time. The pressure was kept constant in the following manner.



At this point in the discussion, the class was asked to give some attention to devising means by which the amount of water that had

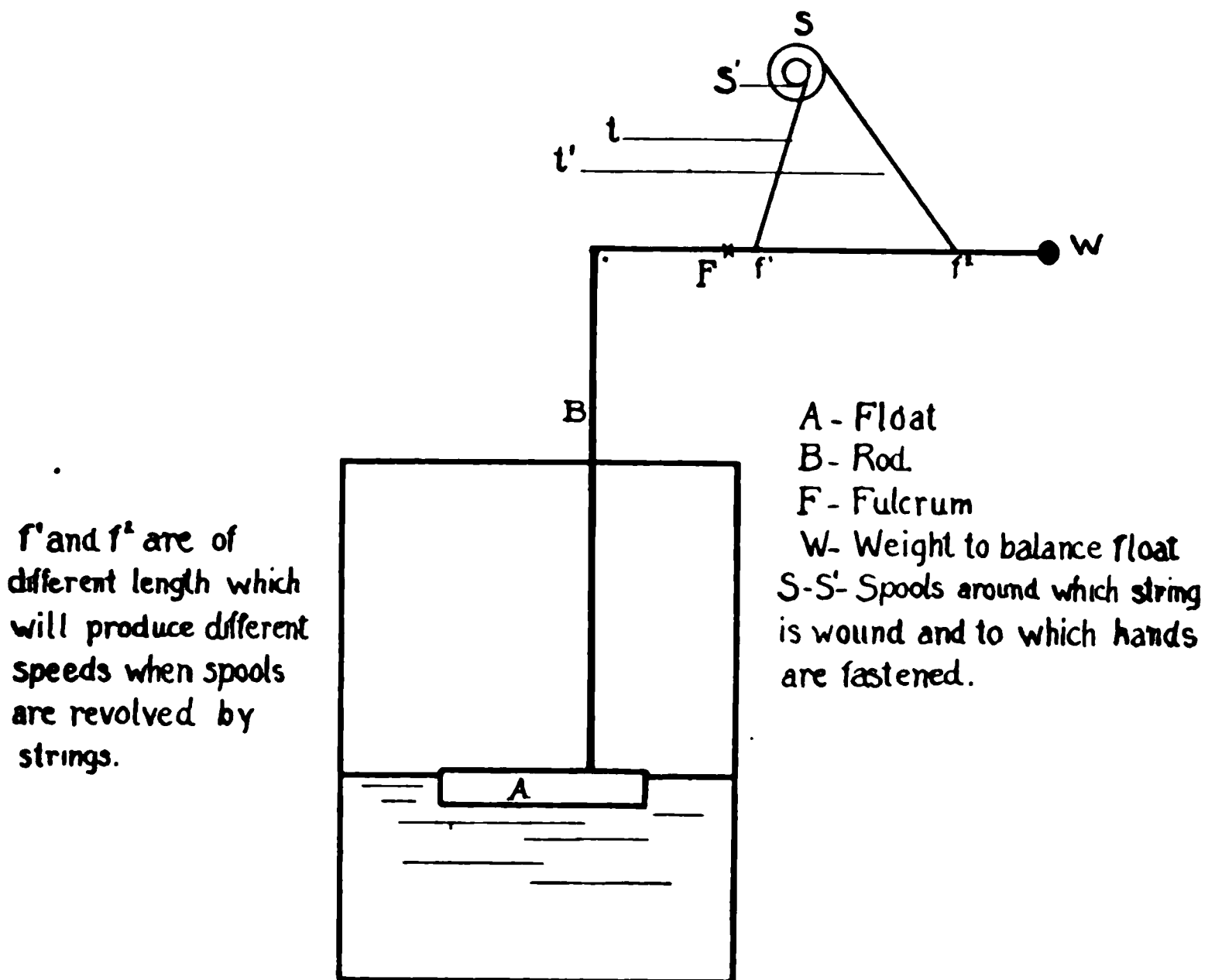
flowed into the lower vessel could be indicated outside of the vessel. Attention was called to the fact that our clocks have dials on the outside by which we can readily see what period of time has passed without the necessity of opening up the clock. The following are some of the "inventions" of the various members of the class, some of which show considerable ingenuity.

In this discussion the fact was brought out that the pressure of the water was the power by which the various indicators were made to move and that the size of the opening through which the water flowed was the escapement which determined the rate of speed. Some of the devices planned were adaptations of devices seen elsewhere, such



as the oil-gage familiar on automobiles, and the water-tank seen along the railroad. Others were attempts to make the water, by means of the power which was stored in it, move hands in somewhat the same manner as the hands of our modern clocks move. The following drawing shows the attempt of one boy to solve this problem in the water-clock.

The familiarity displayed with such devices as levers, floats, weights and the laws of gravity shows the interest manifest in these subjects and proves the need of more work involving elementary physics in these early grades, especially when this work is laden with a human interest, developed through their geography and history work and centered around some simple device, connected with the common every-day life of people. Carried on in this way and removed as far as possible from the realm of the abstract *experiment* of the science laboratory familiar to all students of secondary education, this science work can not help but have a vital place in the course of study of the elementary school.



As in much of our work, this study is to be presented to the rest of the school in the form of a morning exercise. Plans for this have not as yet been completed. Some suggestions which the class has made as to the form of this exercise are rather interesting, especially the suggestion that pupils taking part wear costumes of the people described in the exercise, such as the Hindus, Malays, Chinese, and early Colonials. Also the suggestion that *Father Time* have a conspicuous part, perhaps as announcer.

At the present time, March 22nd, the study is not completed, but it is the intention to trace the evolution of the clock as we know it today from these early beginnings and attempts to divide the day into parts of equal length. This can not be done without a certain amount of comparison between the value placed upon time in civilized and in uncivilized communities. This ranges from that of the lowest form of civilization, in which distinction is made merely between night and day or light and darkness, up to that of the modern day of the express-train and the aeroplane, with the stop-watch and the split-second chronometer.

The weight-clock, the spring-clock and the electrical devices for

regulating and setting clocks and watches at a uniform time, by both wireless and telegraph, will all be touched upon before the study is complete.

While studying the climate of Jamaica, the question was asked by the teacher, "Why is there more rainfall on the northern than on the southern side of the island?" An understanding of air movements was necessary to answer this properly.

Experiments—Wind.—Burning a candle underneath a raised glass funnel. Observing the direction of travel of the warm air. Observing convection currents by the radiator. Ventilating a room properly. Using a vacuum-pump to show pressure of air. General discussion.

Experiments—Condensation.—Boiling water in flask over Bunsen burner. Watching condensation on upper part of the flask. Holding cold Mason jar over flask mouth. Watching condensation. Meaning of vapor. Condensing vapor by passing cold water through parallel tubes. Boiling water with red rock salt in it. Condensing water—finding no salt, no color, in condensed water. General discussion of causes of rainfall and wind movement as indicated by these experiments.

As the journeys continue, frequent repetition of the principles of seasonal changes and wind movement, in explaining the climate of regions visited, is made. The pleasure of the class, in applying its new-found knowledge, seems to increase with use rather than to decrease. One child, in explaining the heavy rainfall on the eastern side of the Andes, in Peru and Ecuador, said: "My mother has been in the Himalayas, and she says there's an awful rainfall there. And I suspect, here in South America, it is something like that. You remember that experiment we had in the laboratory, showing that warm, moist air condenses when it comes into contact with any cold object—well, that's what causes the rain here in Ecuador and Peru. The warm, moist air, comes rolling in from the east" (*sweeping his hand across the Amazon valley*), "and when it tries to get over the Andes, it condenses."

The second geography journey starts in search of meat, with the questions: Why have we been asked to have a meatless day? Where does our own meat come from?

A trip to the Chicago Stock Yards is made. The lines of importation of cattle, sheep, and hogs into the city are found out; routes are traced up, and sources of supply discovered. An imaginary journey is then taken to the great plains, and westward to the irrigated alfalfa farms. A modern ranch is visited. Chief centers of packing other than

Chicago are visited; routes of shipment to eastern markets worked out. A shipment is followed to Europe. Chief centers of importation there are visited. Comparisons are made with other countries producing meat: Argentina, Chile, Brazil, Uruguay, Venezuela, Russia, India, Canada, Australia, New Zealand, and South Africa. The journey is then continued to Australia as a typical meat-producing country. While there, comparisons are made with the chief non-meat-producing countries, such as Japan and China, and those producing a radically different kind of animal—countries in the arctic regions.

The science problems for this work have been covered in the cacao journey. A review of principles with different application is all that is necessary. This part of the geography work is developed in the spring quarter, and the time given up to indoor experimental science is now transferred to the garden, the real nature laboratory.

GARDEN WORK (*Agriculture*)

The child's motive for having a grade garden this year is to aid in the conservation movement, hence all planting is to be vegetables. The outline of the work is as follows:

(a) SEEDS TO BE USED.—What vegetables are best suited to the garden space? Of these, which shall be planted so that the ground may be producing from spring to fall frost? Study of seeds, bulbs, and tubers; study of roots; study of difference between roots, bulbs, and stems.

Final selection of radishes, lettuce, and onions for early garden; these to be harvested before close of school. Then beets, carrots, parsnips, parsley, and horse-radish to be planted in the same space. The second planting will grow with little care during the summer when school is closed, and will be ready for harvesting in October.

(b) SOIL.—What kind of soil is in the garden plot? Is it ready to be used. What is soil?—surface soil, sub-soil? Of what is soil made?

These questions are answered by a review of work done during the preceding fall, when soil was examined and analyzed for window-boxes for the fourth-grade room. The work then given was as follows:

Composition of soils.—Mineral and vegetable matter? What is humus, sand, loam, clay, iron, lime? From where does the soil get these elements?

Experiments—Mineral Study.—Making limestone by means of shells sunk in lime. Examining beach pebbles. Examining sand. Making iron oxide.

The difference between limestone, sandstone, and granite was brought out in this work. One child wanted to know about igneous rocks, so a general discussion of volcanoes and their action ensued. Much interest centered in Vesuvius. Pumice, ash, lava, were examined. Then an artificial volcano was made in the laboratory, using a pile of sand, gas, and



A BUSY MORNING IN THE WAR GARDEN

compressed air. This lesson was followed by stereopticon views of active, dormant, and extinct volcanoes.

This work in soils is reviewed in the spring quarter, with the additional experiment of testing the garden soil for humus and comparing it with leaf-mold, loam, open field soil, and lake sand.

Experiment—Humus Content.—Dry thoroughly samples of five soils to be tested: leaf-mold, loam, soil from open field, lake sand, garden soil. Take equal amounts of each; place in tins, heat red hot in the furnace. Weigh after burning. Note observations as to weight of ashes. Draw conclusions. Bottle samples of soil before and after baking.

Experiment—Water Content.—Fill five glass tubes, stoppered at lower end with notched cork, with five kinds of soil, one kind to each tube. In a sixth tube, place dry, pulverized leaves. Have equal weight in each tube. Pour in water from measuring-glass slowly. Note amount of water absorbed before water begins to run out at bottom. Chart observations. Explain film moisture or capillarity. Call attention to dry farming principle.

From the above experiments, draw conclusions as to needs of garden soil.

(c) **FERTILIZERS.**—Why are fertilizers used? How are plants fed? What are the chief plant foods? What are the chief fertilizers used?

Experiment—Fertilizer.—Making fertilizer from strong lye solution and meat bones brought from home. How should fertilizers be applied?

(d) **WORKING THE SOIL.**—Spading, pulverizing, raking, applying fertilizer.

(e) **PLANTING.**—Making rows; determining depth of planting (onion seeds and onion sets), thickness of planting, compact or light covering.



HARVESTING THE FIRST VEGETABLES

(f) CARE.—Keeping the soil loose; sprinkling (amount and frequency); thinning; weeding. Charting weeds that are troublesome. Watching for noxious insects; noting appearance, habits, destructive qualities, and means of elimination. Gathering of vegetables and disposing of them (exception onion sets). Cleaning of garden ready for second planting. Planting beets, carrots, parsley, horseradish. Contrast depth of planting with earlier vegetables. Why should this be so? Making arrangements for care during summer.

The affection bestowed by the grade upon this war-garden is evidenced by the following writings from the class.

WAR GARDENS

The fourth grade is making a war-garden. The garden is out where the swing used to be. We have planted radishes and beets and onions and lettuce. In the garden there are fourteen small gardens, and two people

work in each one. The way we planted our garden was to take a piece of string and tie two sticks on it, one on each end; we put these sticks in the ground to mark our rows. Then we planted our seeds. When we got through with one row, we took the sticks out and put some other sticks in. These sticks had no string between them. We put them there so that we could tell where we had planted. We planted our lettuce in flower-boxes on the window sill in our room. When it got big enough to transplant, we put it out in the garden. *Warwick.*

* * *

To transplant the lettuce in the garden, we used this method: we took a piece of wood, pointed at one end, and we hit it with a brick to make a hole about one inch. The holes we made two inches apart. After the plants were in the holes, we pressed the ground around them, and then we watered them. *Pauline.*

* * *

We are trying to do our bit in this war as much as we can. The government is asking us to plant a war-garden. The farmers are at the job, working harder than ever. Many of us are going to stay after school and work on our gardens. We want success in our gardens. *Wilhelmina.*

GRADE PETS

From the care of pets, there come a breadth of sympathy and a sense of responsibility toward living things which no one questions. In fact, such a statement is itself trite in the light of recent school work. But the experience gained by the fourth grade the present year in animal husbandry and aquatic life has been a little unusual. It has, on the whole, been tragic.

In the fall of the present school year, the aquarium was thoroughly cleaned and prepared for three goldfish, a turtle, and a mud-puppy. The means by which fish breathe, and the fish's need for oxygen, were observed. Hence the necessity of keeping fresh water in the tank was duly appreciated. However, a violation of the rule not to overfeed the fish resulted in the death of two; then a sympathetic member of the class replaced these by two others. Later, an undiscovered trouble with the automatic supplying of the water caused the death of the three remaining fish. The mud-puppy and the turtle survived. The class immediately scrubbed the aquarium with Dutch cleanser and sterilized it with boiling water. At the present writing, the aquarium is ready for its new occupants—types of spring swamp life.

The following paragraphs, written by members of the class, will give the attitude of the class toward their aquatic experiences.

THE AQUARIUM

Once upon a time, the fourth grade had some fish, but I am sorry to say that the fish we had once upon a time are all gone, every last one—yes, every last one. But we are getting along pretty well. Dr. Lukens has given us some snails and snail eggs, and some leeches, and one of the boys has given us two turtles, and we think we will get some tadpoles. So you see, we are not so bad off after all.

Willard.

* * *

We had some fish, but they did not like us, the water, or the room, so they said they would not live with us, and died.

Frederick.

* * *

The animal husbandry was equally tragic. In the fall a calf, six weeks old, was given to the class. Many hours of manual-training work, in school and out, were necessary to the getting in order of the little barn and runway. Many examples in arithmetic developed in measurements. Short English lessons arose from the telling of the work. Unfortunately, the calf arrived at school at the time the milk famine arrived in Chicago. The calf demanded three gallons of milk a day—such a quantity was not to be had during the shortage. Cream was one day resorted to; evaporated milk another day. A careful mathematical computation by the class convinced the children that, as one member wittily put it, the calf was going to bankrupt the class. So he was sold after three weeks' ownership. But his price did not balance the milk account. However, much valuable information, as to how to feed a calf and what to feed, was obtained by the children. Also, good observational work was done in reading the thermometer when testing the temperature of the milk and water.

The Angora goat, which came later to take the place of the calf, required little care. Water, tested by the thermometer, was given him daily. Alfalfa was kept fresh in his box, and salt was tucked away in a corner of his stall. But one cold February morning, he broke the gate of his runway and disappeared! The story of these two pets was told by a member of the class in the following paper:

ANOTHER SAD PET STORY

The fourth grade of 1918 was very fortunate to get a gift of a pet calf. The calf was presented by Mrs. Seaman, but he drank so much milk a day that we decided to give him back. Mrs. Seaman said that she *gave* him to us. So we sold him. Even then he didn't pay for the milk he had drunk. "Next," said the fourth grade, and "next" did come. Russell Olson, being still fond of animals, brought us a goat. It was a cold winter morning, and snow was on the ground—we found the goat was

FRANCIS W. PARKER SCHOOL



A BEAUTIFUL BUT EXPENSIVE PET

Our teacher said when she was on the bus she saw a goat, but not think it was ours. When we found it was ours, we went out to goat-house, found its tracks, and traced it to the park. There we lost it. Several times boys went out and tried to find him, but couldn't. notified the police. A policeman chased him down to Chicago Avenue, where he lost him in an alley. Gone! And he'll never come back.

Frederick.

READING LIST

of Knowledge, Mee and Thompson (*Educational Book Co.*)
 cat Reader, Blackie.....(*Blackie and Son, Ltd, London, Eng.*)
 America, Reader by Carpenter.....(*Amer. Book Co.*)
 America, Reader by Carpenter.....(*Amer. Book Co.*)
 the World Is Fed, Reader by Carpenter.. . . .(*Amer. Book Co.*)
 Continents and Their People, R. T. Chamberlin.....(*Macmillan*)
 We Are Fed, R. T. Chamberlin.(*Macmillan*)
 aphy, Brigham and McFarlane.. . . .(*Ginn*)
 aphy, Tarr and McMurray.... . . .(*Macmillan*)
 llopedia Britannica.
 n Holmes' Travel Books.
 al Geographic Magazine.
 ar Science Monthly.
 merican Union.
 ship and Railroad Folders.

THE FIFTH GRADE

As an experiment for the current year we undertook to do away largely with the arbitrary classifying of human knowledge and school periods into the conventional academic subjects; we planned to substitute the study of what has taken the place of the home industries of town and farm, and of the quiet social delights of the home and plantation life of colonial days. In the curriculum, therefore, there is not the usual division into history, science, mathematics, etc. What is here gathered together is rather the science work selected out from the children's activities,—to some extent therefore, separated from the environment and correlations in which rest the mainsprings of motive and interest.

In organizing the problems of the curriculum it is well to bear in mind that the method of work will have much to do with the choice and organization of the material. We are trying to train the children in initiative, to choose what they should do and to do it with all their might; to plan to meet difficulties and overcome obstacles by thinking; to co-operate and aid mutually without disturbing; to find information; to ask sensible and helpful questions; to open up a subject for further study; and to see problems and interesting things to do in the commonest circumstances of their daily lives. No outline of work done can ever be followed strictly by a subsequent class, since the initiative of the second class would alter the problems and the make-up of the class would change the mutual aid and interests. Work done by a previous class never can appeal to a new group as an untried field does. Each year's work should be different from every previous one. It is not to be understood, therefore, that all of the following is the achievement of any one class within a year.

The children's initiative cannot start and supply all or even nearly all of the problems of the course. One of the greatest needs of training lies in educating pupils to find problems and recognize vital questions of lasting value in distinction from trivial questions that waste time and hinder progress. The teacher must, therefore, develop large and interesting problems with the class. The seven large type-studies that follow are intended to be of that character.

Furthermore, there should always be a convenient opportunity for the pupils to offer whatever they will that they think is interesting.

Such contributions are largely spontaneous in interest and initiative, since they grow out of what the children think or do or read or hear in their leisure time. This material will come in as unorganized scraps or suggestions and to a considerable degree irrelevant to any other work. The teacher is usually too preoccupied with his or her own outline of work to give deserving and unbiased welcome to these distracting questions. Many of them do, nevertheless, connect up with the large type-studies and should be brought into their proper relation to these. Others that are promising in value, even if they lead far afield from the teacher's outline, should be given time and attention. Those that seem unlikely to lead anywhere should be side-tracked. Finally a considerable number of such questions can be welcomed and answered in a manner satisfactory to the questioner but without taking much time, when the teacher decides they are not worth while to develop more fully with the class. Thus, one of the pupils announced one day that he was ready to explain the four-stroke cycle of the gas-engine. It developed into several lessons and started the type-study of the automobile. Many other problems grew out of these lessons. Another pupil brought a problem in construction of a meccano model of a derrick he had seen in use where a stone building was being constructed. The point was interesting and worth while but was not part of our year's outline. Another pupil wanted to build a dollhouse. We saw most elaborate and interesting dollhouses on one of our excursions, but I did not see my way clear to encourage the making of the dollhouse further than giving a few minutes' time to building with the wooden dometo or cement blocks. The problems in regard to the torpedo, submarine, and net to catch the U-boats were welcomed but quickly passed by as they did not promise so much as other questions before us.

THE INDIVIDUAL PROJECT

All starting is difficult, partly because the pupils do not at first understand what they are expected to do, and partly because most of them have no established interests. A child's motives have a much narrower range because they are largely selfish. To develop responsibility it is necessary to make a pupil feel responsible to a group, to share what he knows and learns, and thus to be responsible for studying with intelligence. During the previous summer I had corresponded with the members of the class and had asked them what they wished to study in the coming school year. I got them to tell me what they



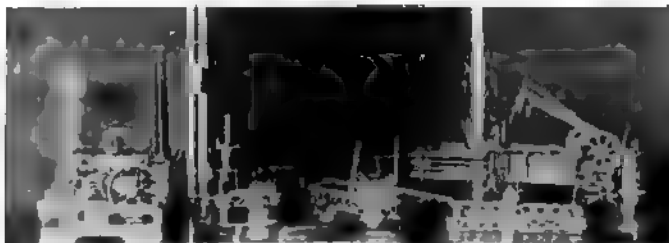
DOMETO AND CEMENT BLOCK CONSTRUCTION

did in their spare time. Later in the fall I asked them all to write what they would do if they had an hour a day available for individual work for a month. I also wrote out on paper many projects and posted



ERECTOR MODELS

them for the pupils to see. I put a lot of meccano and erector parts within their reach, some of it in constructed models. Some pupils brought other models that they had made at home, e. g., meccanograph, derricks, automobiles. I brought some partly finished jobs about the school to their attention and asked for volunteers. Also on excursions we always sought to find problems. Some trips were made expressly to see the problems in the common things around us, such as the operation of the sucker dredge in Lincoln Park, the reproduction in models of the derricks in use where buildings were being erected. To find how these worked and how to demonstrate their operation led to



ENGINE RUNNING PLANER, BAILER, AND WINDMILL

numerous problems of mechanical construction, (e. g., the grasping-tongs of a derrick, the managing of the ropes and pulleys on a swing-derrick, the construction of a sheer-leg derrick, that we saw at the plant of the Chicago Shipbuilding Company, and an adjustable swing-arm drill that we also saw there). It is desirable to have the pupils tested frequently for interests and to ask their parents what the children do in their spare time. Thus I found one girl with an absorbing interest in caterpillars. Another is genuinely interested in the structure of the bony skeleton. As she put it, she wants to compare the skeleton of a monkey with the human skeleton. We are planning a series of visits to the Field Museum for her. These strong interests affect other children, and soon they are caring to plan and to do things likewise.

Some children, of course, show considerable perseverance in their interests. Whenever I find that a pupil is voluntarily seeking for a chance to do some work, or is working on a job outside of school, I feel pretty sure he will accomplish something in school. Thus, one boy got his idea in class and the next day produced a pair of tongs that he had made at home, out of wire. Another has followed up the study of

some of the constellations with an evening spent in star gazing at the school and is planning a school trip to the Academy of Science to see the Atwood Celestial Sphere.

We started out in September by a general survey of the city, the street plan, landmarks, routes, and sections of the city and environs. On these first excursions much other material was collected for a start in individual-pupil projects. The class was organized for work on problems. Those with ideas and capable of independent work, were given great freedom. Those needing directions and capable of following directions, were given positions of responsibility as secretaries and monitors. Those who showed neither originality nor responsibility were assigned to directed tasks under the leadership of other foremen or chairmen. Problems were written on cards and kept on file in a box until undertaken by a pupil. Projects under way were kept in a second box, and completed projects in a third filing-case.



STIFF-LEG DERRICK RUN BY MARINE ENGINE

The children reproduce what they see on excursions in drawings, models, and sand-table scenes. We use the meccano and erector sets, supplemented by extra pieces of tin and wire and building blocks. We build bridges, elevators, conveyors, boats, clocks, looms, derricks, sawmills, concrete-mixers, steam rollers, automobiles, steel skyscrapers, etc. We model in clay and paint in water-colors. We draw, model, and locate good examples of Gothic, Romanesque, Renaissance, and Colonial architecture. We collect and arrange in systematic order sets of specimens illustrating processes in the industries; also albums of pictures of Chicago scenes, and historical and geographical scenes in North America.

We list the foreign plants in the park conservatories, the sources of the building materials in interesting buildings, the specimens in the Field Museum, the chief manufacturing centers in the United States. We collect interesting advertisements that tell things worth while knowing and that offer pamphlets with further information.

The sorting and keeping in order of these papers, pictures, reports, specimens, and models, is one of the chief means of training to habits of order in work, and perseverance in study. The working together on committees develops the ability to co-operate with others.

As a sample of the development and treatment of a larger problem I shall take the one listed below as fifth in the outline of type-studies.

The problems of machine construction for the children very naturally associate themselves with the automobile, as that is the most generally interesting and familiar machine in their environment.

One day in the fall term our most versatile initiator announced his readiness to give the class a talk on the four-stroke cycle of the gas-engine. While I welcomed the subject, I was still surprised at the clearness with which he developed his points through chalk diagrams: intake, compression, power, and exhaust strokes. The essential differences between the internal combustion engine and the steam-engine came out pretty clearly. Other problems likewise opened up: Why do you have to crank a gas-engine? What are spark-plugs? What is the carburetor for? How does it work? What is evaporation? What is the cut-out? What does the muffler do and how does it work? In what ways does the steam-engine differ from the gas-engine? What is the reason the gas-engine has so many cylinders while the steam-engine has only one? Why does not the steam engine need cranking? Why does the steamer have an advantage on starting on a hill? What is the



PROBLEMS IN AUTOMOBILE CONSTRUCTION

arrangement of valves in the steam-chest? We had a toy steam-engine that we operated in the room and it showed the valve action pretty well. It also demonstrated the need of the flywheel.

We have Dyke's *Cyclopaedia of the Automobile* with excellently clear diagrams, but all working parts that we can bring into the classroom or demonstrate on the running car when on school excursions, we use.

One of the boys made one of the simpler automobile models out of meccano. It had no differential. It took several lessons before the class took hold of the problem at all. I found they had never realized in their thinking any problem at all in making the driving-wheels turn a corner. One pupil thereupon built a rigid crown-gear drive to a single back axle and demonstrated what it could do and could not do in turning a corner. This performance was contrasted with the conditions that they all knew exist in any automobile whose rear wheels turn independently of each other. Quite a number of the class made a point of visiting the automobile show in the Coliseum to investigate special problems in the dissected demonstration chassis. One of our ablest mechanical geniuses has since constructed out of meccano parts a good working model of a regular automobile differential that shows perfectly how it is possible to transmit power to both wheels at the same time or to shift the power to either driving-wheel automatically as the car turns to the left or to the right. How is this managed when a steam locomotive goes around a curve?

The problems of the headlight, of the lighting system, of the generator, of the starting motor, of the speedometer, have come up and are within the children's interest and comprehension to a considerable extent.

The universal joint is one of the most interesting and generally useful of the mechanical problems of the driving-shaft. It can be completely demonstrated by meccano construction. The chain-drive, the transmission-gears, the camshaft that operates the intake and exhaust-valves, the link-chain speedometer, driving-shaft and the flexible transmission of power from wheel to wheel by coiled spring enclosed in a flexible tubing furnish absorbing problems of interest and value.

The construction of the carburetor can be made reasonably clear by dissected models.

One of the boys took up the problem of the construction of the air-pump and took a pump apart to learn its internal construction. Although it took him a good while to do the work he got a good deal out of it, as it was the first time he had ever taken any machine to pieces. Its action in pumping air is yet to be compared with the action of a water-pump in raising water and of a force-pump in delivering water under pressure in a pipe. We shall make models of both and have already visited pumping-stations.

In the fall the class went on excursions to see gas engines at work cutting silage and filling silos.

The work on the gas-engine has raised the question of the invention of the steam-engine and its effect on transportation and industry. The older methods of travel on foot and by horse and wagon, by row-boat and sailboat, are pictured and the effect on communication and travel is worked out. The fact that we are in an age largely dominated by the gasoline motor and electric motor is made clear. Thus, too, the great change known as the industrial revolution from the home industries to the factory system is illumined and seen from a different connection beside that of the development of the spinning and weaving mills under *Type-Study No. II, Textiles*.

TYPE STUDIES

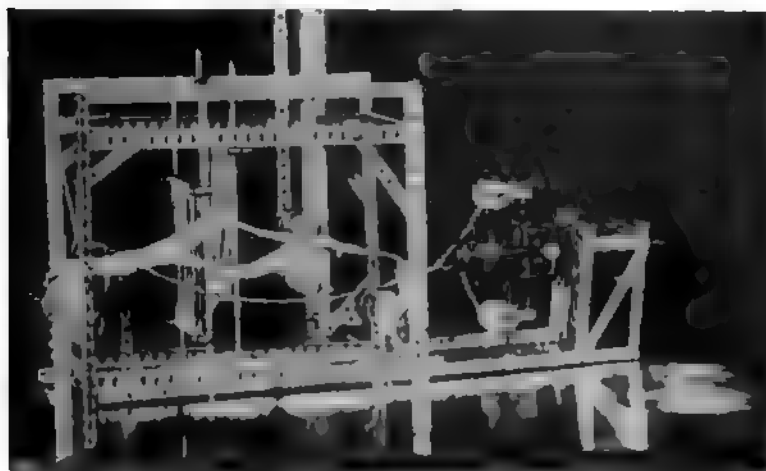
I. *Farming*.—This study is carried out by work in the school garden, by visits to farms, by classwork in recitations, by the making of models of farm machinery in the meccano sets, by excursions to museums and the International Harvester plant.

FALL.—Harvesting, corn-cutting, silo-filling, winter wheat.

WINTER.—Soils; plowing; harrowing; planting; cultivating; rain-fall and snowfall in relation to winter and spring crops; relation of farming to other industries, and its relation to the winning the war.

Spring.—The farmer's fight with insects and weeds; spraying and hoeing; the testing-boxes; seedlings; germination; garden work.

II. Textiles.—In this study we have made seven different sorts of hand-looms, spindles and distaffs, warping-frame, cord-machine for doubling thread, spinning-frame for hand-spinning; we have raised cotton, flax, and hemp in the school garden; we have retted and scutched and hackled the flax; we have spun on the hand-spindle and spinning-wheel; we have woven designs into cloth; we have visited the Hull House Museum and the Field Museum. This study is reported in *Year Book* Vol. IV, 1915.



MECCANO LOOM AND DOUBLER

III. Wheat.—In this study of the grains we take corn as the type, because of its size and abundance, to show the type features of a grain, in flower, stem, and leaf; we visited the flour-mill and we made a school model of a flour-mill; the bread-making in the domestic science room is followed by a visit to Schulze's bakery. The study of the wheat harvests of the world throughout the year reviews the seasonal relations of the great wheat areas and the mutual interest of all mankind in the world's bread production and bread rationing during the Great War. This study is reported in *Year Book* Vol. IV, 1915.

IV. Chicago Industries.—A different industry is studied intensively each year, the other chief industries sufficiently for purposes of

comparison and to understand Chicago's commerce, with the trade routes to and from Chicago. Thus, while we are studying ship-building in detail as a type, the other great industries of iron and steel, lumbering, furniture manufacturing, meat-packing, and the making of farm machinery, are related to the ship-building, and the goods brought to Chicago and those sent from Chicago are listed and studied.

V. *Automobile*.—The four-stroke cycle gas-engine; the comparison of the gas-engine with the steam-engine; the problems of the driving-wheels (differential), of the main drive-shaft (the universal joint), of the maintenance of engine-speed (the transmission), of the steering wheels (the steering knuckles); the changes in transportation and relation to the industrial revolution.

VI. *Cattle*.—The cow is studied as a type of domestic animal as well as of animals in general. Hence the study involves the general facts of animal life and particularly the relationship of the lower animals to man, animal products and animal training.

VII. *Problems Growing Out of History and Geography*.—Demonstrations that the earth is round; how to locate a ship's position on the trackless waste of the ocean; how to determine latitude and longitude; use of the astrolabe; change of seasons north and south of the equator; movements of the sun, moon, and the constellations; measurement of the size of the earth; the international date-line; food for exploring expeditions; Gulf Stream; trade winds; fur trade; tanning; the compass with its variations; the magnetic pole; glacial action, bending ice, moraines, and striae; sand-table constructions; etc.



THE SIXTH GRADE

The central topic of study in this grade is transportation. Both land and water travel are studied and as much of the historic background as is necessary for the understanding of present-day conditions is taken up. It is hoped that the outcome of this study will be a knowledge of the development of methods of transportation from the crude log boat and the dog-sledge to the modern steamer and locomotive, with some idea of the changing social and economic conditions which accompanied the opening up of roadways and the change in methods of travel.

Many of the problems related to the central topic are worked out in detail in the science and the manual-training departments. For example, the evolution of the means of propulsion of watercraft from hand-power to steam, gas, and electric power is studied, and models of the various types of boats of different historic periods are made in the woodshop. The effects of heat on liquids, the conversion of water into steam, and the use of steam, as motive power are topics worked out in the science classes where use is made of the laboratory and its equipment. A survey of the early methods of trail and road-making introduces the bridge and its influences, a topic which is studied in detail in the shop. Here the primitive bridge, its modifications after the wheel came into general use, the development of the modern structure and the modifications it has undergone in adaptation to special needs are studied, and models are made of representative types.

Whenever the grade discussions bring up topics which can best be handled in the laboratory or which require special treatment, they are worked out under the guidance of the science teacher. Since the interest of the pupils always determines the choice of topics, no two groups of sixth-grade children have had identical experiences in general science; the following topics, however, will give an idea of the field that is covered through a study of transportation and will show how the parallel science course clarifies and intensifies the central topic.

I. A survey of early water transportation. Exhibits of primitive boats in the Field Museum are studied, and models made of special types. Buoyancy, and weights of various liquids are the related science topics.

II. Beginnings of ocean travel. Science topics; the mariner's compass, magnetism, the North Star as an aid to navigators.

III. The class becomes familiar with the leading steamship companies by a study of newspaper advertisements and of the bulletins furnished by the various companies whose offices the children visit.

IV. The foreign destinations and routes of travel are studied, and the influence of ice upon the location of these routes is noted. The problems arising from this study which required fuller treatment than could be given by the grade teacher were: Why can icebergs live so long? Why does the larger part of the berg float below the water? Where do ships encounter the greatest danger from bergs? Why are the North Pacific routes not hindered by icebergs? Why are icebergs often hidden by fogs? How are sailors warned of the nearness of ice-fields? Science topics: Evaporation and condensation, the effects of heat and cold upon metals, the principle of the marine thermometer.

V. The structure and size of modern vessels. The science topics studied are steam, its uses, the turbine, and reciprocating-engine.

VI. The big ship-building centers and the reasons for their locations. The related science work is a study of coal, limestone, iron, steel, and oil.

VII. The readjustment in world commerce as wooden boats were displaced by steel vessels.

VIII. The invention of the screw-propeller and its influence on ship-building and commerce. Science topics: Principle of the propeller as applied to boats, aeroplanes, etc.

It is not the plan of the science department to adhere strictly to the curriculum, as outlined in this report. Whenever the children have made experiments outside of school or have discovered facts which interest them, they are encouraged to make a presentation of their experiments or set forth their ideas to the class. During the year several of the children became so interested in this sort of investigation that they fitted up simple laboratories at home.

In order that the science experience may make a lasting impression, wide use is made of models. Such models the children make out of clay, wood, meccano, or other materials. During the school year, each child has an opportunity to make several of these models, which are used in class demonstration and in morning exercises.

In the hope of arousing in each pupil a feeling of responsibility

for contributing to the body of science knowledge acquired by the grade, a definite amount of time per week is given to silent reading on topics under discussion. Each child is provided with a printed list of references, from which he may make his own selection. The titles of these articles were reworded by the teacher to make them somewhat suggestive of material to be found in the article. The books and magazines so used are kept on the reference shelf in the grade room, and may be taken out for home use. Each pupil keeps a record of the reading done, and makes a brief criticism on the helpfulness of the article or on his readiness to recommend it to others.

Many children have shown a tendency to read articles directly connected with class discussion, while others have preferred reading at length on some topic of particular interest to the individual. For example, one pupil has read all of the articles on magnets and performed for the class some suggested experiments, while another is reading all the library has to offer on the subject of flying machines and airships. A page from the reference list, with the children's comments, is appended.

REFERENCES FOR SILENT READING

Boys' and Girls' Book Shelf

1. Icebergs, Vol. 15, p. 189. *I found it very interesting.—Louise.*
2. Why an Iceberg Floats, Vol. 16, p. 413. *I liked both articles about icebergs.—Louise.*
3. Magnetism, Vol. 12, p. 413. *I read all of the articles about magnets. They are very good.—Jean.*
4. Magnets, Vol. 12, p. 411.
5. Artificial Magnets, Vol. 8, p. 408.
6. Electro-magnets, Vol. 12, p. 329. *I think everybody should read it.—Marie.*
7. Electro Magnetism, Vol. 8, p. 411.
8. Why an Iron Ship Floats, Vol. 10, p. 410. *Short, but explained clearly.—Beatrice.*
9. Building a Great Ship, Vol. 15, p. 1.
10. On the Bridge of a Great Ship, Vol. 14, p. 401. *I liked it. I studied it for my morning exercise.—Jean G.*
11. Why the Sea Is Salt, Vol. 16, p. 411.
12. Why the Sea Never Freezes, Vol. 16, p. 41.
13. Why Its Waters Do Not Sink, Vol. 10, p. 215.
14. Size of the Ocean, Vol. 6, p. 404.
15. Why Iron Turns Red, Vol. 10, p. 413.
16. Effect of Rust on Iron, Vol. 10, p. 289. *(Each member of the class read the references about iron before visiting the steel mills.)*
17. Why Iron Can Be Bent, Vol. 5, p. 168.
18. Why Iron Feels Colder than Wood, Vol. 5, p. 168.

19. Submarines, Vol. 15, p. 38. *I read the whole series on submarines.—James.*
20. A Submarine on an Ocean Floor, Vol. 15, p. 47.
21. Flying Machines and Airships, Vol. 15, pp. 139, 153. *I read all about aeroplanes.—John.*
22. Airships and Balloons, Vol. 6, p. 228.
23. How a Balloon Is Sent Up, Vol. 5, p. 144. *The articles were good, but rather simple if you understand aeroplanes.*
24. Flight of a Balloon, Vol. 6, p. 415.
25. Pets on Shipboard, Vol. 2, p. 374. *It is worth while reading.—Laura.*
26. Warships, Ancient and Modern, Vol. 8, p. 335. *Interesting and exciting.—Jessie.*
27. Dogs on the Battle Field, Vol. 14, p. 303. *A very good article.—Murray.*
28. Nature Giants That Man Has Conquered, Vol. 15, p. 7. *I recommend it to others.—Ward.*
29. Queer Things About Explosives, Vol. 16, p. 336. *Easy to read and interesting.—Laura.*
30. Boy Who Rode on the First Train, Vol. 18, *I liked it.—Thompson.*
31. Triumphs of Science, pp. 147, 84, 69, 57. *I read all about submarines.—John.*
32. Popular Mechanics. *The article about provision motors is very good. I liked it best.—Bernal.*

The principal topics, with some of the detailed experiments carried on in the laboratory as part of the sixth-grade work, follow. It is not to be understood that these are the only experiments given, but that they are fairly representative of the work.

I. *Primitive Boats*—The first problems which arise are: Why do ships and other bodies float? Why does a steel ship float while iron sinks? How are skin boats and floaters made? To answer these questions, buoyancy is studied and the weight of various liquids compared. (See under V. *The Study of the Steamboat*.)

A further problem is: How do fishermen at sea obtain a supply of fresh water?

Experiment.—Freeze both salt and fresh water; taste both liquids and ice from each. Note results and answer questions. (It must be remembered that the flow ice may have been glacial ice.)

Another problem is: Since ice comes from water, why does it float rather than sink?

Experiment.—Freeze water in a test-tube, a sealed Mason jar, or a closed can. Note results and formulate a rule about the behavior of water when it changes to ice.*

*Certain of these experiments may be left for a time later in the year, when the temperature is right.

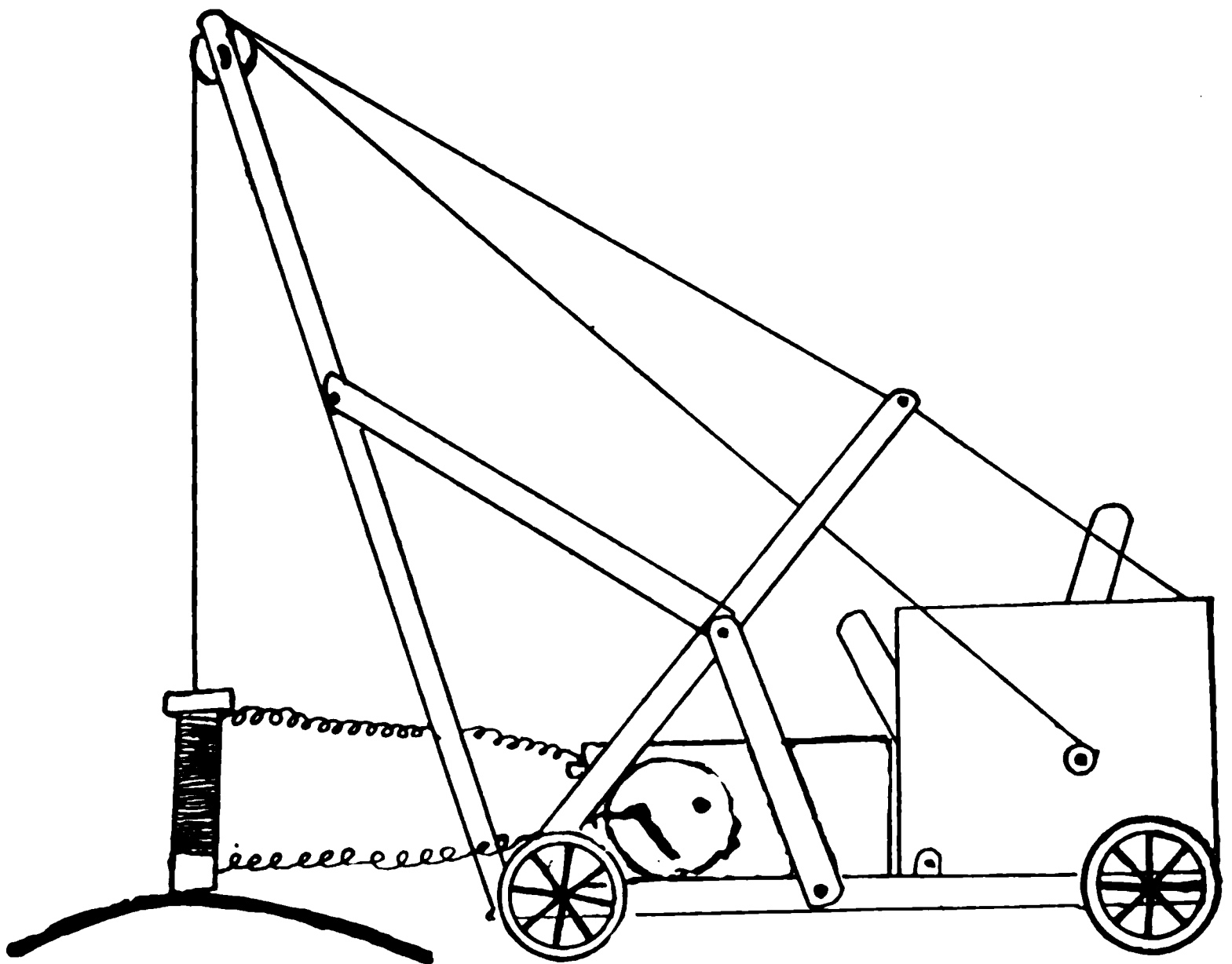
II. *Beginnings of Ocean Travel.*—The questions which present themselves are: How did early navigators know their directions at night or when they were out of sight of land? How did the invention of the mariner's compass solve this problem? How is the mariner's compass made and used?

Experiment.—Let each child take a common sewing-needle and float it on a cork in a vessel of water. What direction does the needle take? Rub the needle on a magnet to magnetize it, and again float the needle. Compare this result with the first, and also with the compass. Suspend a bar-magnet in the room by means of a thread and wire stirrup and again compare with compass. Do other substances besides iron and steel become magnetized?*

Experiment.—By means of a magnet with marked ends, identify the ends of a floating magnetized needle. Also identify ends of the compass-needle in the same way.

Experiment.—The electro-magnet. Place a compass in a coil of wire and pass an electric current through the coil. Let the children see that an iron magnet is not necessary to set up a magnetic disturbance. Discuss the uses of electro-magnets.

As an outcome of the study of the electro-magnet, one of the



PUPIL'S DIAGRAM OF ELECTRO-MAGNET CRANE

*Some groups will ask how a magnet can be made from a piece of iron. In answer to this question the theory of magnetism may be very simply stated.

boys devised an electro-magnet crane and another planned an electric reciprocating engine.*

AN ELECTRO-MAGNET CRANE

The electro-magnet crane is a new invention for lifting steel and iron without fastening. The principle on which this works is an electric current circling in an insulated wire, which is wrapped around a piece of soft iron. Some men think a piece of iron or steel is made of little particles, which have two poles, a north and a south pole. These little particles cannot be seen even under a very powerful microscope. These poles, before the circling of electricity, are all facing in different directions, but while the electricity passes around it, the north poles all face in one direction and create a power to draw steel or iron. The reason steel is not used for an electro-magnet is because once steel becomes magnetized it stays magnetized for a long time, but iron loses all magnetism as soon as the current is broken.

February 25, 1918.

John.

III. *Steamship Lines*.—This topic has no related laboratory work.

IV. *Influence of Ice on Steamship Routes*.—Why do fogs occur about icebergs? In order to solve this problem, it is necessary for the children to know something about evaporation and condensation. Afterwards, application of these topics is made to the distribution of rainfall over the earth.

Experiments.—Heat equal amounts of water in an open dish and in a test-tube. Which requires the longer time for evaporation? Hold a cold plate over vapor coming from heated water. Let water vapor from a warm teakettle enter an ice-cold Mason jar. Distill some water. Observe all the changes in these processes.

A discussion following these experiments enables the children to explain why mist and fogs occur about icebergs.

Why does it rain much on the windward side of high mountain ranges and but little on the leeward side? Why do we have snow-capped mountains in desert regions? A relief-map of the world is put before the class. The direction of the prevailing winds is given and the pupils are asked to predict as best they can the relative rainfall of various parts of the earth. Their predictions are checked by reference to a rainfall map in Longman's Atlas.

It is logical to follow the discussion on evaporation and condensation with a brief study of the effects of heat upon gases and solids.

Experiments.—Fit a flask with a rubber stopper and a U-tube containing mercury or water. Heat the flask and note expansion of air.

*Most of the children have erector outfits and are inclined to use them as a means of demonstration.

Fit a flask with rubber cork and upright glass tube. Fill with colored water. Heat flask and note rise of water in the tube.

Arrange a copper rod in a circuit with an electric bell so that the bell rings upon the contact of the copper rod as it lengthens when heated.

The children may be asked to devise thermometers and fire-alarms in which the principle of expansion of solids when heated is involved. They can construct such thermometers or alarms and use them in a class demonstration or in a morning exercise. During the year 1917-18, the children planned a number of marine thermometers and presented the morning exercise which follows:

MORNING EXERCISE—ICEBERGS

Friday, November 23, 1917

Thompson. One of the most northerly Atlantic steamship routes is that of the Allen Line, which runs from Montreal and Quebec (*pointing to the map*) up through the mouth of the St. Lawrence, past the northern coast of Newfoundland, and across the Atlantic to the British Isles. It is from twenty to one hundred miles shorter than any other route, and saves about a day in time. This route cannot be used except in the winter months on account of the icebergs. In the winter, all this region (*pointing to the map*) is a mass of ice, but in summer the lower part melts away, which frees the upper part, thus giving it a chance to break up and come down. These floating masses are called icebergs. Since the *Titanic* disaster, a great many investigations have been made about icebergs and their movements. This morning, we will tell you about the results of some of these investigations.

Beatrice. When the sailors see great masses of floating ice, they are able to recognize two kinds of icebergs. One is very level, just like the top of a table; the other sharp and irregular, extending out of the water like a spire. The first is formed on the water and the other on the land. When ice is frozen on a level surface, it is always level, though it may be many feet deep. So the level ice is that which is frozen on the surface of the northern seas and floats off in large fields when the warmer weather causes it to break up. The land ice differs from that formed on the water, because it is frozen on an irregular surface. So instead of being level, it is rough and uneven. As land ice is formed under great pressure, it is also harder and bluer in color than water-ice.

William. Greenland is the largest body of land north of the arctic circle. On Greenland there are perpetual snows. It will snow and then thaw, and these thaws are sometimes followed by sudden freezing, which converts the snow into ice. This is repeated until there is an ice-sheet over the country many feet in depth. This is sometimes called the continental ice-sheet. This ice-sheet starts to move towards the coast. What causes this movement no one knows, but there are several theories. One is, that when ice is frozen under great pressure, it will flow like thick tar. Another

theory is that in winter the ice contracts and in summer it expands and these changes cause a slow forward movement. Ice, in the interior of the country, moves about seven inches a day, while near the shore it moves much more rapidly,—about thirty or forty feet a day. The rate of movement depends upon the steepness of the slope and upon the temperature. During Greenland's short summer of two or three months several thousand icebergs are discharged into the sea.

Lambert. When the moving mass of ice has crept to the sea, the formation of the coast determines the way in which it will break off to become an iceberg. If the coast is high, and steep, like this (*sketching on the blackboard*), the ice-sheet moves forward, pushing the end beyond the cliff until it becomes so heavy that a great mass breaks off and falls into the water below. If the coast has a long, gentle slope, like this (*sketching*), the moving glacier follows the slope and may go some distance under the surface of the sea. As ice is lighter than water, the water always tries to buoy it up and at last a berg breaks off, rises, and floats away.

Since ice is not very much lighter than water, a large part of the berg floats beneath the surface. In this vessel of colored water I have placed a piece of ice and a piece of cork. The piece of cork is very light, so that only a small part of it is beneath the surface. The ice is almost as heavy as water, so that only a very small part of it is above the surface, about seven-eighths of it being under water.

Katherine. After the iceberg has broken from the glacier, it stays around the coast for a long time. There are two forces which finally cause it to go out to sea—the wind and the current. When the iceberg extends several hundred feet above the water the extended part acts just like a sail. The wind catches it and blows the berg down to the sea. The current, which helps in this work is the Labrador current, in Davis Strait. The icebergs are caught in this current and carried down into the paths of commerce. While confined between the shores of Greenland and Canada, this current flows very steadily and swiftly, but when it gets to the ocean, it spreads out like a fan, part of it following the coast of Labrador and the other part moving outward toward the east. Thus this current carries some icebergs to Labrador and down our Atlantic coast to the Gulf of St. Lawrence, while others are carried out into the ocean.

James. Just off the southeast coast of Newfoundland, in the vicinity where the *Titanic* disaster occurred, many icebergs are often held together in a kind of jam. This is due to the action of the current. The Labrador current brings the bergs down along our eastern coast, and when it spreads out some of them are carried out to sea. The Gulf Stream comes up from the south, and in this part of the ocean (*pointing to map*) the two currents meet. Where the two currents push together with the same amount of force, the icebergs are held in a jam, which sailors fear very much.

Philip. After an iceberg gets into the Atlantic, it lives for a considerable time. It may live many months, and some bergs have been known to exist for two or three years. There are several reasons for this. One is its enormous size, and another is that on account of the hardness of glacier ice, from which the berg was formed, it will not melt readily. The third

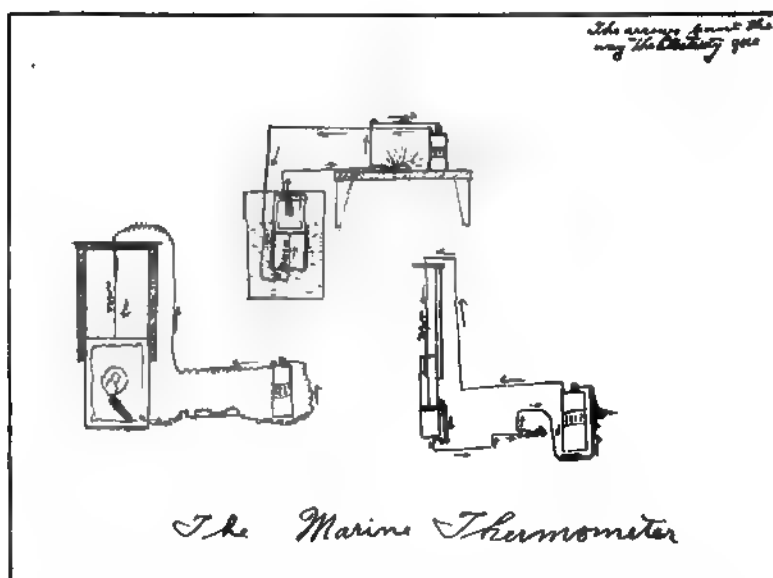
reason is that icebergs do not often travel singly, but in fleets. At certain seasons they break off and many come down into the ocean at the same time. The most advanced bergs cool both the water and the atmosphere around them, so that the sun cannot easily affect them. Another protection to the berg is the fog which forms around it, and keeps off the rays of the sun. Later, Robert will perform an experiment showing how this fog is formed.

Ward. If an iceberg were not carried south by the wind and current, it would live a greater length of time than it usually does. The temperature of the air and water around Greenland is very cold, and therefore the iceberg would have a chance to exist for a long time. But as the iceberg is carried south, it soon comes to a warmer climate. The air about the berg is then warmer than the water in which it floats. But when it reaches the Gulf Stream, the water is warmer than the air around the iceberg and therefore the under part melts much faster than the part that extends above the surface of the water. This thawing of the under part in time causes the iceberg to become top-heavy. Then it will turn over. Sometimes an iceberg turns completely over several times during the process of thawing. Icebergs have been known to be so tall that when they turned over, they struck the ocean floor and were held there for quite a while. This occurs in the shallower water near the coast.

Robert. Icebergs are a great menace to sailors, who are continually on the watch for them. There are many ways in which sailors can detect the presence of bergs. I am going to tell you some of them. One is that on a clear sunny day sailors sometimes see a curious bright flickering light on the horizon. They know this is caused by the ice, although they may not see the iceberg. It is caused by the reflection from the iceberg. Another indication of the nearness of icebergs is the presence of a bank of mist. This mist is formed from the warm moist air above the Gulf Stream coming into contact with the iceberg, which condenses it into mist. I am going to show you by an experiment how this can happen. The air above this jar is warm and moist, like the air above the Gulf Stream. This Mason jar is cold, like the icebergs (*he empties ice from a Mason jar and holds the cold jar over the one filled with hot water*). The vapor on the inside of this jar is formed like the fog that is around the iceberg.

Mr. M. (holding the jar up so that the audience may see). There is a considerable amount of vapor in this jar.

Oehm. Another way to detect icebergs is by the use of a marine thermometer. This thermometer works on the principle that copper wire contracts when cooled. The wires are arranged like this (*makes a drawing on board*). When these two wires contract, they pull a lever, which is connected with a circuit. This rings a bell up on the ship's deck or shows a red light on the navigation-bridge. I have a little device here that works on the same principle as the marine thermometer. I have a copper wire running from this part (*holding up device constructed from a cigar-box, with copper plates and wires*) up through a spindle, and it is wound around the spindle, so that if the wire contracts, it will touch here and will turn the stem and will touch this and cause the bell to ring. I am going to place this in very cold water. (*He does so, and the bell rings.*) That



is the way it rings when the wire contracts. Sailors have found this a very dependable means of knowing when they are approaching floating ice.

Margaret. We made this to represent a marine thermometer, like that used on ships. This is made on the same principle as the one Oehm described. When a solid is heated, it expands, and when cooled, it contracts. So, when this copper wire is put into ice-water, the wire contracts, pulls this lever, and that pulls the wire and a bell rings (*this device was much larger, constructed from a wooden box*). This copper wire is drawn from this spindle to this other spindle. Then there is another copper wire from this spindle, and it connects with a battery. Then there is another copper wire from the first spindle to an indicator. There is another wire on the back that extends to the battery. When this copper wire contracts, it pulls the indicator, which touches this wire and makes the connection, thus ringing the bell.

Dorothy. Sailors on the Atlantic ocean fear icebergs, but those on the Pacific ocean do not. The reason for this is that there are few bergs in the Pacific ocean, because there is no great land mass extending far north where the icebergs can form. There are some glaciers formed in Alaska, but when these reach the coast and break off, forming icebergs, they stay near the shores until they melt away. There are icebergs in the Arctic ocean, but they do not come down into the paths of commerce, because the only way they can get into the Pacific ocean is through Bering Strait, and as that strait is very shallow and very narrow, bergs do not pass through it. For these reasons, there are no large icebergs in the north Pacific, and sailors do not have to be on the look out for them.

Julia. Even though icebergs are so much feared by the sailors, the

people along the shores of the north country are never sorry to see them come down, as they are very important to the people who live along these places. One reason is, that when the people from Labrador and Greenland see that the icebergs are coming down, they know that there will be plenty of fish. Some kinds of fish prefer very cold water, and as the icebergs chill the water for miles around them, these fish like to swim near the bergs. Then the people get into their little boats, go out as near to the icebergs as they can and get the fish. Another use of the iceberg is that it serves as a means of supplying fresh water. If an iceberg is passing and the sun has melted it, the water collects in little hollows and the fishermen can drink it. If there is no water on the iceberg, they can break off the ice and melt it. Icebergs have sometimes served as means of transportation for animals. During the long northern winter, Labrador and Greenland are so covered with snow and ice that the animals have a hard time finding food. They sometimes venture out on the ice as far as they can go in search of food or fish. Sometimes they swim so far that they find the passage back too great, and they climb up on icebergs to regain their strength. Sometimes polar bears have been carried long distances by floating masses of ice. Although they are not native to Iceland, many people have seen polar bears there, and it is believed they were carried to that region by means of ice.

V. *Modern Ships*.—How is a Vessel Propelled by Steam?

The children bring their toy steam-engines and operate them before the class. Diagrams and models of reciprocating-engines are used and explained as far as possible by the pupils.

In order that the pupils may realize the significance of the invention of the steam-engine and the effects of its use on the structure and carrying power of ships, it is well to study the evolution of the boat from primitive types propelled by hand power to modern steam-driven craft. In our school this study is made in the woodshop as part of the manual-training course.

STUDY OF THE STEAMBOAT

In connection with the work in Geography and History for the year the handwork of the boys centered about the making of various models of historical importance in the evolution of the steamboat. These models furnished considerable material for discussion in science, principally physics of an elementary nature.

Two years previously this same grade had been interested in the making of boats and had become familiar with the law of buoyancy, which they had proved by means of simple apparatus and tests which they themselves had made. A review of this work was therefore introduced at the beginning of the year's work.



MODELMAKING IN THE SHOP

Why does an object float? This was the question with which the discussion opened. This seemingly simple question was quickly disposed of by the equally simple answer, "because it is lighter than water." However, objection was quickly made to this answer by one of the boys, who cited the case of steel ships, "and steel is heavier than water." The majority of the class seemed to be satisfied with the answer that it was the air inside which held the boat up. Illustrations were given of tin cans and basins floating in water until tipped in such a manner that the water entered and displaced the air. To some of the class this did not seem to be the true answer and various cases were introduced which seemed to disprove this point. Shape had something to do with it, according to some of the boys. To develop the law of buoyancy the following apparatus was devised and tests were made:

1. Two blocks of wood were made of exactly the same size, one of them being of Washington red cedar, which is very light in weight, and the other of Georgia pine, which is very heavy and full of pitch. These blocks were then gaged with lines $\frac{1}{8}$ inch apart and then paraffined to make them waterproof.
2. A cardboard box was made by one of the boys, the inside dimensions being the same as the outside dimensions of the blocks. This was then marked with lines $\frac{1}{8}$ inch apart and paraffined.
3. A pan of water big enough to float the blocks of wood was produced.
4. A pair of scales with gram weights was brought from the science laboratory.

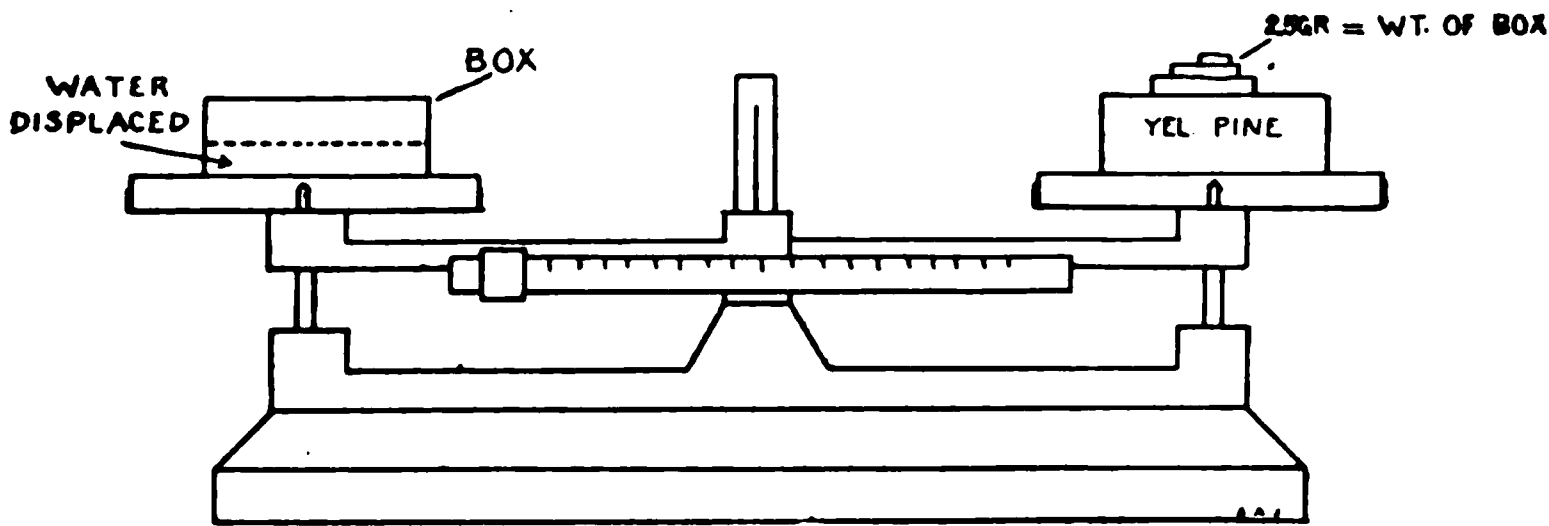
The two blocks of wood were floated in the water and the distance to which each sank was easily noted by means of the marks gaged on the sides. The fact that one block sank deeper in the water and took up more room than the other was noted, and led to the term "dis-

placement.” The question of accurately measuring the amount displaced by each block was settled by first noting the depth to which each block sank and then pouring enough water into the cardboard box to reach a similar depth by means of the lines marked on the inside which corresponded to the lines marked on the outside of the blocks.

Now, by weighing the box with the water and deducting the weight of the empty box, the weight of the water which was displaced by the block was easily determined. Then the block was weighed and the results compared. Considering that the apparatus was made by the pupils themselves and the actual weighing and measuring was done by them, the results as set forth in the following table were quite accurate enough to prove that the amount of water displaced by the floating block of wood equaled the weight of the block itself.

TEST OF WOODEN BLOCKS

Red cedar sinks to mark.....	5
Yellow pine sinks to mark.....	9½
Weight of cardboard box and water displaced by red cedar block....	193 gr.
Weight of cardboard box.....	25 gr.
Weight of water displaced.....	168 gr.
Actual weight of red cedar block.....	169 gr.
Difference	1 gr.
Weight of box and water displaced by yellow pine block.....	358 gr.
Weight of box.....	25 gr.
Weight of water displaced.....	333 gr.
Actual weight of yellow pine block.....	331 gr.
Difference	2 gr.



A trip to the Field Museum was made for the purpose of studying primitive types of boats, the Pacific Island out-rigger and the Eskimo kayak. Similarity in constructive principles between the kayak and the modern boat was noted and the shape as a factor in speed and seaworthiness was discussed. The copying of nature forms, such as the duck and the fish, was very evident, and some discussion was had regarding the effect which is produced when a boat is propelled through

the water and the factors which must be considered, such as displacement, friction, cleavage of the water (at the bow) and the swirl or suction and eddy effect at the stern.

The next step was to classify boats as to manner of propulsion through the water. The following outline was worked out. Considerable discussion was held as to the exact chronological order of development: Rowboats (man power); sailboats (wind power); steamboats (steam power); electric boats (electric power); gasoline boats (gas power).

The length of time which the sailing-vessel had held the center of the stage compared to the other types of boats was noted and led to a discussion of the various types of sailing-vessels classified according to their rigging. Pictures were brought in by the boys to show the various types, and dictionaries, encyclopedias and books of history were ransacked to furnish their quotas for this list.

TYPES OF "WIND POWER" OR SAILING VESSELS

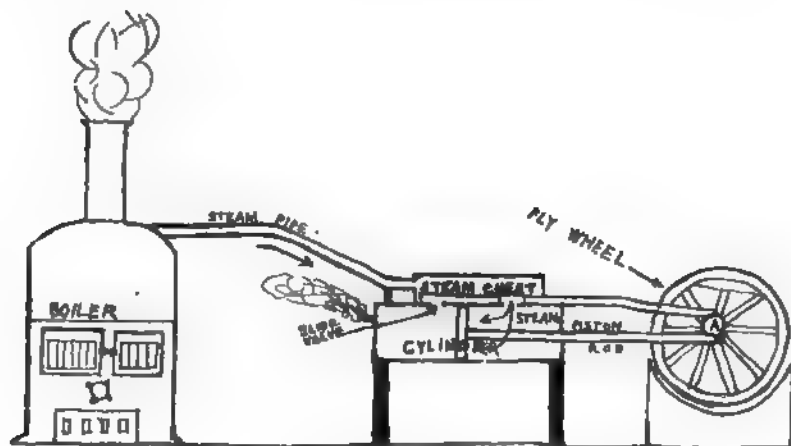
Canoe with outriggers	Corvette	Lugger
Canoe with lee-boards	Xebec	Felucca
Catboat	Galleon	Frigate
Schooner	Junk	Cutter
Caravel	Yawl	Ketch
Brig	Tartan	Sharpie
Barque	Barkentine	Dhow

This era in navigation could not be touched upon without reference to the various nations famed in history for their discoveries at a time when the art of ship-building was not as highly developed as at present. The following list of nations famed for seamanship was developed through discussion: Norse, Portuguese, Dutch, Greeks, Venetians, Genoese, English and New England Colonies. The importance of ships in supplying food to the Allies and starving Belgium, as well as for supplying our own troops, naturally led to a discussion of the great part that the steamship must play in the termination of the war.

The development of the steam-engine by James Watt, and the attempt to use the steam-engine for most of the necessary work of the world, naturally led the more adventurous inventors to attempt to propel boats by means of this new toy developed by the inventive genius of man. A study of the early attempts led to some interesting discoveries. While Robert Fulton's name was familiar to most of the boys as the inventor of the steamship, a closer study revealed the fact that there were others who had struggled with the idea and though reaching

partial success, had failed to arrive at a practical solution. Among these were John Fitch and John Stevens and even our own Franklin. Thus Fitch and Stevens attempted to make the steam-engine copy the exact motions of the hand-propelled oar, which meant the developing of a reciprocating motion in the piston-rod of the engine, which was transferred to a circular motion in the main shaft and fly-wheel, and then again changed back to a reciprocating motion on the oars. Fulton arranged the paddles or oars from the center of the shaft, and the paddle-wheel was developed which was much more efficient.

During the time devoted to this subject several of the boys brought small steam-engines from home, and the whole class was able to study at close range the action of the steam-engine and to become familiar with the names of the essential parts. Diagrams were made and terms learned, such as reciprocating, piston, slide-valve, cylinder, walking-beam, etc.



PUPILS DIAGRAM OF STEAM ENGINE

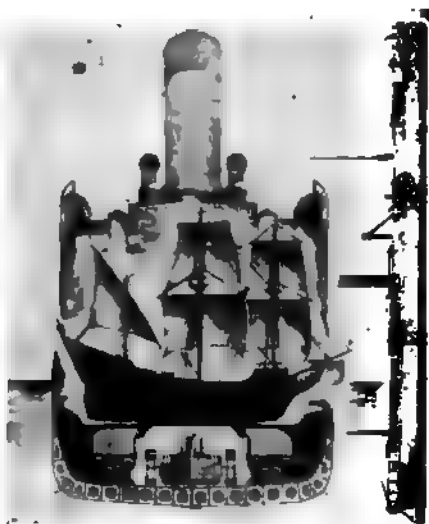
The turbine-engine as the later and more efficient development of the steam-engine was studied from pictures and descriptions in books.

In the shop work the attempt was made to construct some of the types of boats studied. Fulton's *Clermont* was one which was selected. Fitch's two types, the stern-wheel and a boat propelled by horse-power using a treadmill, were fairly successful. The size of the class (19) was somewhat of a drawback to the successful completion of many models requiring individual attention.

The benefit obtained from this study, however, was well worth the effort spent on it, even though the results on the handwork side

were crude and incomplete. The admiration for the persistence with which such a man as John Fitch clung to an idea and sacrificed money and friends in his effort to reach success, was an important benefit derived from the study.

The daring displayed by the early explorers was also marveled at when it was realized that these explorers sailed uncharted seas, with crude instruments, in vessels so tiny that exact reproductions have been picked up with block and tackle and hoisted aboard our modern liners and transported across the Atlantic as a bit of baggage. These are lessons quite as important to the growing boy in dealing with the industries and work of the world as is a technique gained in the use of certain tools.



THE HALF MOON ON BOARD THE MAURETANIA
(Courtesy of the Scientific American)

VI. *Ship-building*.—What raw materials are needed to build ships? Coal for heating and reducing iron ore; iron ore as a source of iron and steel; limestone as a fluxing material; clay for fire-brick; wood for finishing parts of vessel. The class work centers about the study of coal and the steel and iron industry.

COAL

(a) *ORIGIN*.—What is coal? Does vegetable matter contain carbon? What does an examination of coal tell us about the origin? What do coal-beds reveal about the earth's history?

(b) **STRUCTURE OF COAL-BEDS.**—How were folds made in the coal-beds? Earth shrinkage as a possible cause of earth folding.

Experiment.—Pour a little melted paraffin on a small rubber balloon. Allow to harden and then let some of the gas escape.



A DEMONSTRATION EXPERIMENT

(c) **MINING COAL.**—The long wall and room and pillar methods of mining coal are explained and compared.

(d) **THE BURNING OF COAL.**—What does burning mean?

Experiments.—Make oxygen from potassium chlorate. Burn carbon, sulphur, magnesium, and iron wool in oxygen. Explain the test for carbon dioxide with lime water. Burn a piece of coal in a bottle of oxygen and test the gas remaining for carbon dioxide.

IRON

(a) **IRON DEPOSITS.**—Where do we get our iron? Can it be mined like gold or silver? Where is iron found? Where are the principal iron-ore deposits of the United States?

(b) **EXTRACTION.**—How is iron obtained from hematite? In answer to this question, the steel industry is carefully studied as it is carried on at the Illinois Steel Plant at South Chicago. A flow sheet is made of the entire process of steel-making, showing the purpose of each operation. Emphasis is laid upon the following points:

1. Carbon in the form of coke steals away the oxygen from the iron ore so as to free the iron.

2. Limestone combines with the impurities to form slag, which is afterwards used to make cement. In this connection the origin of limestone is discussed, and artificial limestone is made by cementing broken shells together with lime. The product is compared with limestone specimens in the

laboratory. The spring field-trip to Starved Rock affords excellent opportunity to study the limestone beds as they are eroded in Deer Park.

3. The Bessemer converter first purifies the iron by burning out the impurities. The iron is then converted into steel by the addition of a specific amount of carbon.

An excursion to the steel-mills is made and a morning exercise is usually given.

(c) LOCATION OF STEEL-MILLS.—Why is the iron ore brought from the Lake Superior region to Chicago? To Cleveland? To Pittsburg? To Buffalo? To Detroit? Why is not the coal shipped to Lake Superior and the entire industry located there?

The increased use of oil as a substitute for coal, especially on war-ships, and as the source of the gasoline needed by all gas-engines has led to a study of the oil industry, with an excursion to the Standard Oil plant at Whiting, Indiana.

DOMESTIC SCIENCE

In the sixth grade the children all show a keen interest in the problems related to the home. This interest, while equally strong in both boys and girls, is centered on quite different problems. For this reason the work is divided during the year, that of the boys coming in the fall and that of the girls in the winter and spring.

The influence of the Boy Scout movement is strong at this age as well as the natural desire to learn how to cook in camp. The work of the boys is based entirely on these interests, and each year an excursion is planned where a lunch can be cooked out of doors under true camping conditions.

The work of the girls bears directly on the home and takes up, in as broad a sense as possible, the ideals of home-making. Although based on different interests, the questions asked by both boys and girls involve the same fundamental ideas of economy, sanitation, health, and food preparation.

The need of economy and co-operation on the part of the children has been emphasized by the necessities which have come about through the war. The problems studied by the boys are as follows:

I. *Economy*.—What foods can best be cooked in camp? With regard to bulk and weight; with regard to cost? How can waste be prevented in the camp or in the home?

II. *Sanitation and Health*.—What conditions must exist if we wish to keep well? Need for cleanliness and order; proper care of food and supplies. What food materials are needed for strength and



A LESSON IN DOMESTIC SCIENCE

growth? We are asked to save necessities and to use substitutes during the war. What are the necessities? What are their substitutes?

III. *Food Preparation*.—What foods should a camper know how to cook?

OUTLINE OF LESSONS

- (a) *VEGETABLES*.—Boiled and mashed potatoes.
- (b) *BEVERAGES*.—Cocoa.
- (c) *CEREALS*.—Boiled rice.
- (d) *MEAT SUBSTITUTE*.—Macaroni and cheese.
- (e) *MEAT AND EGG COOKERY*.—Bacon and eggs.
- (f) *FISH COOKERY*.—Fried fish.
- (g) *FLOUR MIXTURES*.—Pancakes, corn muffins, baking powder biscuit, ginger bread, plain cake.
- (h) *MEAL COOKERY*.—Lunch cooked out of doors.

The work of the girls concerns the same general topics.

I. *Economy*.—What foods are the cheapest to buy in order to get the nourishment we need? How does the cost of home-made dishes compare with those bought at the store? How can we best aid the country in its campaign to prevent waste?

II. *Sanitation*.—What conditions of cleanliness must exist if our homes are to be pleasant and healthful?

III. *Food Preparation and Service*.—What are the foods that a girl ought to be able to prepare? How can these foods be served so as to be attractive and palatable? How can variety be secured?

The ideals and care of the home, personal hygiene and all the broader aspects of home-making are introduced whenever possible

THE SEVENTH GRADE

All that follows has doubtless been said many times, but must needs be repeated. Do we wish our students to have a live, active interest in plant life and its relation to man? How important is that interest? Would a more general and intelligent interest in plant life make for qualities of character and points of view of which we find ourselves in need as we consider the growing ideals of citizenship? What emphasis should a study of plant life receive in school? To establish a real interest, how early must we begin and how must we proceed? It is a matter of common knowledge and experience that the old traditional botany courses, as a method of teaching about plant life, fail. Dr. John D. Coulter says, in his preface to *Plant Life and Plant Uses*, "Boys and girls, by mere accumulation of organized knowledge about plants, may never come to that appreciation of plants as a part of life which is believed to be very desirable." Though there has long existed general agreement concerning these facts, and nature study and school gardens have been prescribed and tried as solutions to the problem, we still find ourselves wondering why young people, though perhaps interested for the time being, and in some cases indicating more than a passing interest, do not more generally seek voluntarily to come in contact with plant life and its study.

Doubtless much, or most of the time given to so-called nature study has been devoted to mere observation, not impelled by curiosity or a keen desire to know, but directed by the teacher who was endeavoring to teach certain facts required in the course of study. The school garden remains our chief source of hope. There it is that the boys and girls can, through their own activity, have the joy of touching and smelling the earth and of watching the wonder of germination and growth. There it is that they can observe living organisms, form and color in all their diversity and variety. There it is that their craving for beauty can at least in some small measure be fed. The need for expression in drawing and painting, modeling and making, singing and dancing, is an accepted theory, well considered and provided for in all good teaching. The addition of the art of gardening as a form of expression needs yet to be made.

So far, the school gardens have most generally been used to teach agriculture or truck-gardening, with emphasis on economic values, or

to teach isolated facts about soils, plants, insects, etc. Surely, the love of beauty is instinctive, and this we may not forget when we consider the school garden. What other opportunity so wide and adequate offers itself for the teaching of the esthetics which will beautify our city windows and gardens, and our farm roadsides and dooryards? It is only when interest in and love for plant life is part of our child-life that it endures. Man may travel devious paths in search of those interests which lead to the great vistas and inspirations of life, but his garden is a broad and certain gateway to beauty, ever-widening horizons, and finer human relations.

With such an activity to engage one's efforts, it remains to help the boys and girls choose wisely from the numberless problems which present themselves with much insistence. The making of the school garden is the center for most of the science and geography work of the seventh grade. However, before presenting the plan of the year's work, it may be well, in answer to inquiries which are frequently made, to insert some general remarks about the garden as a project in this school.

Our membership has grown and our available garden space has gradually decreased to make room for other outdoor activities also necessary to the life of the school (houses for the museum, the wireless club, first-grade playhouse, etc.). These changed conditions could not practically and fittingly be met by the use of our old garden plan.*

The plan used then provided an opportunity to consider each child's choice, so that he might express himself as an individual, esthetically, commercially, or scientifically; it provided space for classes to work as such on a class problem; it planned, for the sake of appearance and better product, to have all children making similar choices plant in the same sections; it attempted to give each individual all necessary assistance.

Since that time many changes have occurred affecting the garden experiences of our children. The use of the old plan meant too many children working in too small a space, duties too limited, and interference so constant and discouraging as to destroy the respect which any good work should receive. The old plan also required, especially from grade teachers a high degree of co-operation, which sometimes was necessarily artificial or forced. Since neither the experience nor the training of class teachers, except in individual cases, gives them a vital interest in plant life, the farm, and the garden, it is a mistake

*Described in detail in the *Elementary School Teacher*, Jan., 1906.

to expect them to be of great assistance. Therefore, it has been necessary gradually to reorganize the work so that a better adjustment may be made between what we can hope for from our school garden and what we can really get.

Is the real function of a school garden different after all from that of any other garden? If it does not make its appeal through its esthetic, economic, and social values, is it worth having? Is it possible to utilize our time and space, however limited or small, so that our boys and girls can be led to feel the beauty of the garden, to like plants and actively to contribute to the home or the community by planting and caring for them? Can they be led to like appropriateness of surroundings out of doors so that they can diagnose ugliness, prescribe a remedy and obtain a fitting and beautiful result?

A school in the city must take into consideration a very short season for gardening in the spring, and a long absence from school during the summer months. Frequently the care given the garden in the summer is inadequate. A greenhouse for tiding plants over the winter is often impossible. For these and other reasons, emphasis on garden work should be heavy in the spring. By careful planning, the garden can be made especially beautiful in the early spring and again in the fall, when the children return to school. Laboratory work, and classroom discussion, can be emphasized in the winter quarter to give more time for actual gardening in the spring and fall.

So far the school has provided some outdoor planting experience every year for every child through the first seven grades. Thereafter it has fostered only special interests by giving plots to older students who wish to give their leisure or vacation time to such work. The kindergarten and first grade have small plots of their own and grow corn, popcorn, pumpkins, etc., to feed to their pets; they also grow a few flowers easy of culture. Grades two to seven plant the vegetable garden and when called upon help to beautify neglected spots on the school grounds. The seventh grade cares for the flower garden and the grounds in front of the school building. They prepare and plant the hotbeds which supply the school, home gardens, and window-boxes. Bulbs for house culture are distributed every fall. The narcissus, which can be grown in bowls filled with pebbles or fibre and water, and which blooms in four or five weeks, is of course the favorite. This fall, the hotbeds were filled with a variety of bulbs; single and double, parrot and reflex tulips; hyacinths; jonquils; scillas; snowdrops;

daffodils; and Easter lilies, which were brought into the schoolrooms in February, to be forced into bloom for Easter.

About five or six hundred two or three-year-old trees are distributed every spring for Arbor day, at a penny each. These are all planted in home gardens. Though many do not survive, enthusiastic reports come in from successful planters. A number of trees are now fifteen or more feet high, and their owners, the alumni, report their growth with pride. Some special trees, shrubs, or vines, are planted every year by the May Queen, as the gift of the Senior class to the school. The high-school students and men of the faculty spend a Saturday in the garden in the spring doing work too heavy or too difficult for younger children. They do heavy spading in the vegetable garden, haul manure, lay out beds, make paths, mend and paint fences, etc. The high-school girls prepare a luncheon and help to make the day one of wholesome, purposeful labor and of genuine social worth.

The year's work in the seventh grade subdivides itself into the following projects:

I. The harvesting and general observation of the fall garden lead to the giving of two morning exercises in October. The first is organized to make a careful report to the school of the work done in the garden by each group and of the outcome of this work as a part of the harvest. This exercise is directly followed by another, given by the seventh grade, on the year's world crop reports. On the same day, the "County Fair" takes place, described in *Year Book*, Vol. IV, p. 23.

II. Clearing the vegetable and flower gardens for winter and for planting of spring garden.

III. Planting of bulbs and perennials and covering for winter protection. Planting of bulbs for indoor forcing.

IV. A review and organization of science experiences of previous grades into a more orderly, complete body, using the laboratory to answer questions.

V. Close observation and care of spring garden, and planting of summer and fall gardens.

I. *The Year's Crops*.—Consideration of our garden crop naturally brings to mind such questions as, How much food do I eat in a day? In a week? In a year? Can I picture concretely that amount? In what proportion do the great staple products appear? How much food does my home use in a year? Our city? Is it possible to think,

in terms of bulk or measure of any kind, how much food the world needs? Who does all this work of production? Where are the great important staple crops produced, and why?

The study of the contribution of the various countries to the world's food supply opens the field of problems involving the interrelation of food production and climatic conditions. Definite questions concerning air and water relations are brought up, which are answered in subsequent laboratory and classroom work. Geography also has a real significance here. The study of this question includes practically a review of the geography of the world. Climatic relations are constantly in evidence and numerous facts are mentioned as such without discussion of causes and relationships; for example, barley and rye appear in the list of certain products of Russia and Germany. The reasons for this are mentioned but not fully discussed in this preliminary work. The exact reasons are more fully set forth in the detailed study of climate, air, water, and soil made in the laboratory during the winter quarter. Mathematical geography and the history of the development of geographic knowledge are topics studied in this connection.

II. *Fall Gardening.*—The garden must be cleared before an early frost comes, so that our planting may be done. What shall we do first? If we clear it before the frost shows us what will be killed, how can we know what to pull up and what to leave? Why do some plants die and others live through the long, hard winter? What are annuals, biennials, perennials? Are some plants annuals in some latitudes and perennials in others? Do some plants naturally require more time to grow up, to mature, just like some animals? Why? Does this difference in time show itself in the results accomplished by the plants? What are herbaceous plants?

Shall the dead annuals be saved for covering or not? Would it be better to burn them for fertilizer? If they are scattered about do the seeds sometimes self-sow? Are some plants troublesome in this way? To clean the fences, we must pull off the annual vines. How can we tell them from the perennial climbers? How many of each do we have on the school grounds? What does a plant gain by being a climber? Shall the soil be spaded or not? Shall fertilizer be added? What is the best fertilizer for bulbs? For perennials?

Our school closes about the middle of June. What plants, that will surely blossom before school closes, shall we choose to make our garden beautiful for spring?

III. *Fall Outdoor and Indoor Planting.*—What bulbs and plants that blossom in the spring are planted in the fall? What is a bulb? What work does it do? Does it do more than store food for the coming season? Does it form its flower before the winter comes, or in the spring? Can we, with the use of the magnifying-glass, see the flower in the bulb when it is cut open? If it doesn't form its flower by fall, can it blossom in the spring? Why can we not use forced bulbs the second season? Why can some bulbs be forced in water in a few weeks and why do others need to be stored in a cold, dark place for several months before forcing? How much work can bulbs do under the snow and ice in winter? The root growth made in winter out of doors is always a great surprise, and so also is the rapid growth of leaves and blossoms made after bringing the bulb into the heated room.

These observations lead to such questions as: Why do we have finer wild flowers some years than others? Does nature always successfully provide plants with protection against sudden changes in temperature or other irregularities in the weather? If not, what happens? Are there evidences of such histories to be seen in the woods? Are some annuals or perennials good for house forcing? What kinds? Do we ever force bulbs or plants which naturally bloom late in summer?

There are always questions which lead to the idea of the chemistry of growth. These are given such attention as may encourage further observation and which will clearly indicate the relation of chemistry to growth.

Can we tell by looking at a plant or bulb how it should be transplanted? Are there signs or marks of any kind to show how they were planted before? Has the size of the bulb anything to do with the depth of planting? What happens when the bulb is planted too deep? What happens when it is planted too near the surface? A few bulbs in the garden were found on top of the ground when the snow disappeared. How did they get there? What pushed them out? What can be done to aid a plant or bulb newly set out? What might hinder its growth or kill it? What bulbs or plants can live through the winter without covering? With covering? Not at all? What makes good covering?

Some time is spent on the study of plants, their history, the bulb industry and its place and magnitude in the work of the world.

IV. *Review and Organization of Science Experience With Laboratory Work.*—The urgent questions arising from the garden project, together with a growing desire of the children to relate their vari-

ous science experiences, require a simple organization of earlier work, and the addition of such experience and subject matter as a more advanced attitude requires. This organization serves to widen their mental horizon and at the same time reveals new relationships.

The children have had some first-hand contact with land forms, plant life, animal life, agriculture, horticulture, meteorology, astronomy, geography, physics, chemistry, and mathematics in their excursions, travels, and activities in and out of school. But the actual handling of laboratory apparatus, to ascertain facts and the reasons for them, has not been very extensive. It is therefore important that the children should become better acquainted with the experimental method. The pertinent questions arising from the grade project offer excellent opportunities for this kind of study.

The laboratory work is organized on the basis of the four great divisions: atmosphere, water, life, soil. These are of course all inter-related and are not taken up as units or in any formal order.

It is not the purpose of this report to describe all the experiments given in the laboratory, but only to state enough of them to show that by means of experiments the children can solve many of the problems which confront them.

(a) THE ATMOSPHERE.—The general topic of the atmosphere and the need of experiments in this field may be introduced by means of such questions as these: Do our senses always tell us the truth? Since we cannot see the atmosphere, does that prove there is none? How can we prove there is an atmosphere? The discussion leads the child to the conclusion that the only way to find out is by means of experiment, and that the atmosphere is a fertile field for experimentation. The questions raised by the children offer many suggestions as to procedure. Of these, the following are typical:

What is the atmosphere, and how do we know there is an atmosphere?

Experiment.—Show with a vacuum-pump what happens when air is exhausted from a square gallon can.*

Experiment.—Set up a mercury barometer. Weigh the column of mercury from the barometer. Measure the area of the end of the barometer-tube, and compute the weight of the column of mercury in a tube with an end area of one square inch. Find the pressure of the atmosphere as determined by the average results of the experiment.

*If no vacuum-pump is available, pour a small amount of water in the can and boil for a few moments, until the steam has displaced the air. Then place an air-tight stopper in the can. As the steam condenses a partial vacuum is formed and the can will collapse.

Let each child keep the barometric readings and weather conditions for a period of time and plot a curve. Note conditions of weather on all points on the curve. Can any deduction be made as to the kind of weather which accompanies high and low barometer? In this connection weather-maps are studied.

Of what does the air consist? Is there much oxygen in the air?

Experiment.—The teacher may demonstrate the approximate amount of oxygen in the air. Invert a cylindrical jar over a piece of wood which is floating in water. Place a length of magnesium ribbon on the wood and ignite. Does the amount of air in the jar become smaller? What is the approximate amount of oxygen in the air.

Is the air all oxygen? The other constituents of air are mentioned.

How pure is the air, and what are some of the impurities present?

Experiment.—The teacher may show that the air is impure by drawing a stream of air through a funnel, over which there is stretched a cloth gauze and a layer of wet filter-paper. Which is more free from dust, city or country air? How does the lake breeze improve Chicago's air?

In addition to the above properties of air, the following questions may be studied in like manner and a broader application made: Why does hot air rise? What causes winds? What are cyclones and tornadoes? What work does the wind do? A discussion of the latter question involves a trip to the sand-dunes and the lake shore.

(b) WATER.—The subject of water is naturally introduced through the garden project. The amount of water in the ground under varying conditions of temperature, soil porosity, and dryness of the atmosphere offers many interesting problems. The subject may be introduced by having the pupils recall the three forms of water. Such questions as these are asked: What is the difference between boiling and evaporation? Between water-vapor and steam? Why does the amount of water-vapor in the air vary? What effect has this upon evaporation?

These questions, together with those dealing with distillation and condensation, lead to a discussion of a number of problems such as: Why is rain fall heavier in certain places than in others, and why is the ocean salty? What becomes of rain-water?

Experiment.—Let each child pour water on a box of clay and observe that some runs off as surface water, some becomes ground water, while some is evaporated. With silver nitrate test for hardness the water which seeps through.

Which kind of water accomplishes the most mechanical work? To answer this question, use is made of the sand-table or a stream out of doors. Discussion of work of running water naturally follows and the reason why river valleys and deltas are fertile is brought out.

Other points to study about water are: Its chemical composition; how the small capillary tubes in the soil make it possible for a plant to get water; atmospheric water, clouds, dew and snow.

(c) **LIFE.**—In the garden the children come in contact with various aspects of plant and animal life, and begin to realize the wonderful adaptation of this life to its environment. The natural desire on the part of the children to know something about the life of the past and the change from past life forms to present ones, is the reason for making a brief study of prehistoric life. In this study the effect of changing environment upon life forms is emphasized.

The purpose of this historical study is fourfold: First, to satisfy a curiosity about prehistoric life; second, to make museum specimens intelligible; third, to show development of life and the dependence of life upon environment; fourth, to furnish a background for the work in the eighth grade.

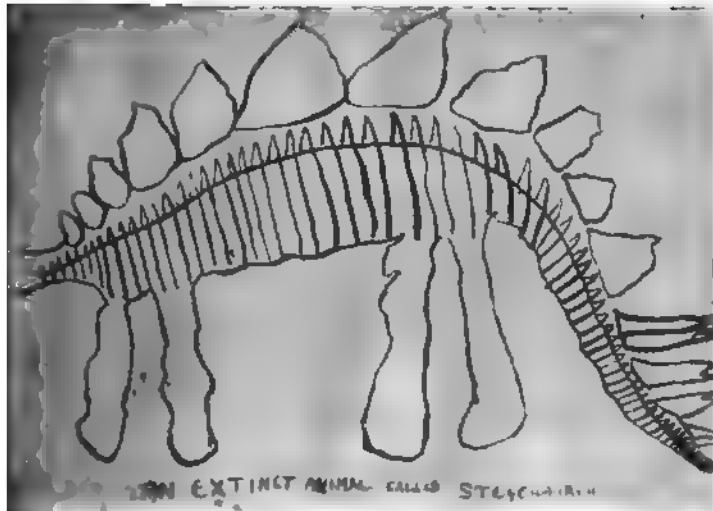
For these reasons an outline of the five eras of earth history, and the periods of the last three eras are given. Since the names are difficult, the derivation and meaning of each are explained.

1. *Azoic* (without life).—We speak of the azoic as a very long era, in which vulcanism was probably the dominant feature. We learn to recognize the most common igneous rocks; such as lava, obsidian, granite, pumice, and ash.

2. *Archeozoic* (dawn of life).—This era is spoken of as one of very long duration. Running water, the wind, and the other agencies were at work. The era stands out as one of the great folding and faulting, also as a period of some vulcanism. We learn to recognize specimens of gneiss, schist, slate, quartzite, shale, sandstone, limestone, and conglomerate. Under what conditions is each formed? What is a sedimentary rock? What is a metamorphic rock? What evidence of life is there in the archeozoic era?

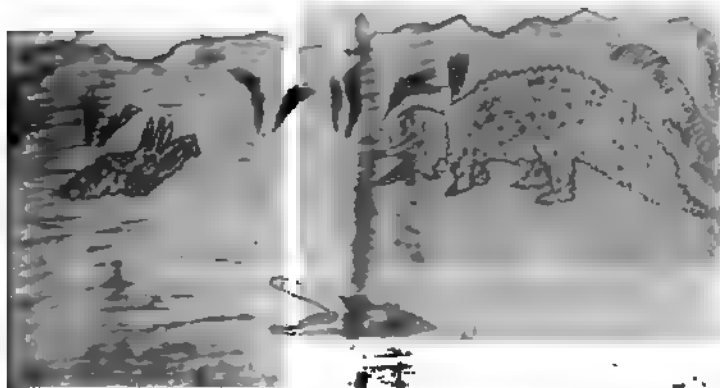
3. *Paleozoic* (very old life).—Under the paleozoic seven divisions are mentioned: Cambrian—named after an outcrop in Cambria, England; Ordovician, named after ancient tribe of Ordovicii in Wales; Silurian, named after ancient tribe Silurii, in Wales; Devonian, named after outcrop in Devonshire, England; Mississippian, conspicuous system of rocks in the Mississippi Valley; Pennsylvanian, the conspicuous system of rocks in Pennsylvania; Permian, named from outcrop in Permian, Russia.

4. *Mesozoic* (middle life).—Three divisions are given: Triassic, named from the three formations which occur in Germany; Jurassic, from the out-

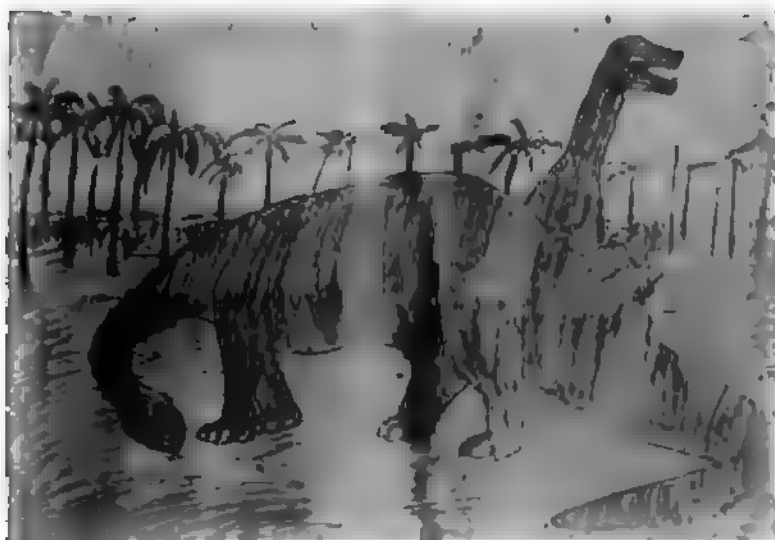


in the Jura mountains; Cretaceous, from the chalk formation in England and Germany.

This era is remembered as the era of saurians, or reptiles. We visit the Academy of Sciences and the Field Museum to see the skeletons and the restoration of the reptiles. On our book-shelves we keep many cards and references and publications of various museums. From our ex-



DRAWINGS OF EXTINCT ANIMALS FOR MORNING EXERCISE



DRAWINGS OF EXTINCT ANIMALS FOR MORNING EXERCISE

cursions and references we learn something about the conditions in which the fossils are found and the probable conditions which caused the animals to be entombed and become fossilized. We review certain facts which lead

men to believe that they know something about the landscape of prehistoric times. The entire study is for the most part descriptive.

To make clear the purpose of naming the periods under each era, it may be well to give an illustration. A certain fossil in the museum is labelled, *Dinosaur—Triassic—Jurassic*. The child at once tabulates the animal as having lived in the mesozoic era, which is late in the world's history, rather than that it is just "prehistoric."

5. *Cenozoic* (recent life).—The divisions mentioned are: Eocene, Miocene, Pliocene, and Pleistocene. We speak of this as the era of mammals. In this connection we trace the development of the horse, as shown by fossils. We also note the apparent evolution of birds from reptiles. Emphasis is placed on evolution and its connection with climate and physiographic conditions.

This life-study culminates in a morning exercise on prehistoric life, or in a lecture by an authority on paleontology.

In this study we make use of the information we gained when studying running water. We note how earth materials carried by the streams to lakes, oceans, and lowlands can there be deposited as sediment; how this may be reworked by waves and winds, and then laid down in beds; how animals' remains may be imbedded in these sediments, later to be fossilized; how beds of Cambrian rocks may lie upon Archean and all the others above in order, or how they may easily be formed out of their regular order in the column; how horizontal beds may be formed on upturned beds; what the coal measures mean, how they may get out of the horizontal position, and what they tell us about prehistoric climate.

These questions make necessary a brief study of folding and faulting as probably caused by shrinkage or tension of the earth's crust.

We begin a brief examination of the United States Geological Survey folios, choosing those which are typical of the different regions in the United States. The children observe that the beds are practically undisturbed in some regions and very much disturbed in others. A report of each region is made to the class by pupils who have been in those regions. For example a child who had visited in Texas reported the principal facts as she found them in the Uvalde Folio, Texas.

The children are encouraged to study the folios of the regions where they plan to spend their summer vacations. A number of inquiries have been made as to whether folios of the regions to which they are going are available.

(d) SOIL.—The garden project furnishes the next important subject for investigation. Of the problems studied in this connection, the following are those which are solved by means of experiments in and out of doors. Of what does soil consist? To answer this, we take samples of soils from the different areas in the vicinity of Chicago and examine them under the microscope. We note that soil is made up of a greater or smaller amount of inorganic material, dependent upon the source of that soil. For salt content we test one of the soils, preferably one of clay, by means of silver nitrate, as in our water experiment.

How is soil formed? We go to the lake shore and see soil being made mechanically, and then we go to our garden and see the vegetable matter decaying, and note that soil may be made by the process of chemical action.

What makes the soil black? In answer to this, we pour a small amount of sulphuric acid on vegetable matter of different kinds. We note that they all turn black. We explain that the sulphuric acid produces a very rapid decomposition, and that the resulting product is similar to that of the slower decay.

Does soil hold water? What does porosity of soil mean? Is a soil which is very porous a good soil? If so, under what conditions? What is a thin soil? How can a thin soil be improved? What is a subsoil? How can soil be made to retain water? Is a fertile soil without water-holding power practical for cultivation? What becomes of a soluble fertilizer which is used on a very porous subsoil?

What is a hotbed? What makes it hot? Does the decomposition of organic matter affect the temperature of soil? Does it make any difference whether or not the decomposition of the organic matter is just started or is complete? What kind of manure is required for a hotbed?

Do all plants need the same kind of soil? What is an inorganic fertilizer? What is bone-meal? Lime? What is the purpose of each as a fertilizer? What is the value in deep plowing? Is it a good thing to plow under the last year's growth of weeds, cornstalks or wheat straw? What is dry farming? Why should the soil be cultivated? When should one cultivate deeply and when shallowly? Under what conditions is rolling a good thing?

These problems are merely suggestive of some of those which come up in connection with the study of soil. The application of the information gained is made in the garden.



PREPARING THE VEGETABLE GARDEN

V. *Planting and Care of Garden.*—What are the first signs of growth at the return of spring? How early do we see them in this latitude? What is the green that you see creeping into all plant life, even before the snow disappears? What is chlorophyl? What is protoplasm? Can we see it at work under the microscope? What effect has the sunlight on plant-cells? Have mushrooms and toadstools chlorophyl? How do they live? What kind of service do they render? What is the green in water? What are algæ? What is the green on barren rocks? What are lichens? What are mosses? How do all these plants multiply? Can we see this multiplication going on under the microscope? What are ferns? Why do ferns have seeds and no blossoms? What are spores? How do they sprout? What are seeds? How do they sprout? What kind of plants come from monocotyledonous seeds? From dicotyledonous seeds? Why do some plants have so many seeds and some so few? Can plants which produce few seeds protect them in special ways?

What methods of protection against changes in temperature and rough winds can we discover in the newly appearing growth? When and how shall we uncover artificially protected plants? What can we do to help nature to produce strong plants for early maturing in the vegetable garden and early flowering in the flower-garden? Which seeds should be planted in a hotbed? Which in a cold-frame? Which in the open ground? Which can be planted with success in either?

How is a hotbed made? (See IV (d) Soil.) What is a cold-frame? How made? How must we plant seeds to get the best results? What can be done to aid in scattering evenly very fine seeds? How

much room do seeds need in a hotbed or cold-frame? Why does a toad usually come and stay in a hotbed? Shall we leave him there or try to keep him out? How do so many weeds get into the hotbed? Do some seeds survive in manure? Here a study of the seed industry is made. How can we test our seeds? How do farmers insure getting good, clean, clear seed? Why does it pay them to test their seeds?

What is the condition of a plant taken from a hotbed? How do hotbed conditions compare with those out of doors? What can you do to prepare plants in the hotbed for transplanting out of doors? What can be done to aid plants in recovering from the shock of trans-



PLANTING ACTIVITY

planting? What factors in transplanting cause the severest injuries to the plant? What must we know about plant habits to guide us in placing and spacing plants? How does speed of growth in a hotbed compare with speed in the open air? How do conditions and appearance of plants change after transplanting? Why? Are there some which cannot stand transplanting at all? Why? Why do we find so many grubs near the surface when we transplant? Shall we leave them or destroy them? What indications appear in the garden to warn us of plant injury by insects or birds? Do insects and birds ever help plants?

The bulbs planted in the fall blossom in April and May, when

the children watch enthusiastically for each blade and leaf as it pushes up through the scarcely thawed ground. The garden early becomes a beauty spot with its dainty crocuses, scillas, narcissi, daffodils, and jonquils. These give place to the gay tulips, bleeding-hearts, iris of many hues, peonies and other perennials which gladden the eye in the later spring days.

By the end of May the spring garden is passed. The bulbs must be carefully dug up, spread in the sun to dry, labeled, and put away for the summer, to be planted again the next fall.

Then come the spading and weeding of the beds preparatory to transplanting from the hotbeds and sowing in the open ground the



BEAUTIFYING A NEGLECTED SPOT

seeds of those plants which will blossom during the late summer and make the garden a profusion of flowers in the fall when the children return to school.

The children transplant from the hotbeds into the garden-beds, zinnias, petunias, scabiosa, asters, cosmos, marigolds, snapdragon, celosias, salvia, nasturtiums, bachelor buttons, poppies, and other late flowering plants, and border the beds with sweet alyssum, ageratum, dwarf nasturtium, etc. By the fences they plant moonflower, morning glories, Australian pea-vines, scarlet runner, and other trailing vines.

The tender transplanted plants need careful daily watering until they are rooted. The beds must be weeded and all be in good order by the closing day of school. Through the summer months a few of the children who live in the neighborhood come occasionally to weed. The bulk of the summer work must, however, be left to the janitors.

So, by means of careful selection and planting, and good growing weather, one can have in the school garden a succession of beautiful flowers, from the early snowdrops and crocuses which come with the melting of the snow to the late flowering cosmos, hardy chrysanthemums, asters and zinnias, which brave the first frosts and earliest flying snows of autumn.

SEVENTH GRADE REFERENCE LIST

Rocks, Rock-Weathering, and Soils, G. P. Merrill.....(Macmillan)
 Geology; Physical and Historical, H. F. Clelland.....(American Book Co.)
 Volcanoes of North America, I. C. Russell.....(Macmillan)
 Sea and Land, H. S. Shaler.....(Scribner)
 Physiography, R. D. Salisbury.....(Holt)
 Text Book of Botany, J. M. Coulter.....(Appleton)
 Extinct Animals, E. R. Lenkester.....(Holt)
 An Introduction to Geology, W. B. Scott.....(Macmillan)
 Animals of the Past, F. A. Lucas..(American Museum of Natural History)
 Rivers of North America, I. C. Russell.....(Putnam)
 Historical Geology.....Chamberlain and Salisbury
 Boys' Book of Model Aeroplanes, Collins.....(Century)
 Elementary Physical Geography, W. M. Davis.....(Ginn)
 Aspects of the Earth, H. S. Shaler.....(Scribner)
 Nature Study, W. S. Jackman.....(Holt)
 The Log of the Sun, C. W. Beebe.....(Holt)
 General Science, Caldwell and Eikenberry.....(Ginn)
 Inventors at Work, George Iles.....(Doubleday)
 Elementary Physics and Chemistry Texts.



THE EIGHTH GRADE

In these days of blood and iron, the man who talks of matters he knows nothing of is doubly intolerable. One listens eagerly to the laundress' mother, who was a peasant on one of the Kaiser's estates and knows well the service America has done for the immigrant from Germany; but one turns with weariness and disgust from the second-hand opinions of one's acquaintance and one's newspaper about the conduct of the war, the diplomacy of our Department of State, or the future of Russia. If one were but privileged to be as rude as he feels, what a deal of weariness he might avoid in ordinary conversation. Instead of permitting the chance-met acquaintance to emulate the loungers in the village post-office, settling the affairs of the world while they wait for the late train, one could say, "What do you read?" "I read," says he, "*The Chicago Tribune, The New Republic, The Literary Digest, The Public, and The Atlantic Monthly.*" "Very well, then I know what you think. Is there any subject that you really know something about from first-hand experience? If you must talk, talk about that."

To afford opportunity for first-hand experience, to make plain how essential it is to observe and handle material, if one is to draw conclusions on material matters, is the function of the teaching of science from the teacher's point of view. There is no contention here that first-hand opinions in the realms of taste and of intellect are or are not superior in value; the writer wishes to submit that in any realm there is a difference in quality between the knowledge gained by one's own deduction and the knowledge gained by assent to authority. I believe that giving children much of this kind of opportunity makes citizens fit for democracy and capable of understanding and supporting it; while long training of the other sort makes a servile people, fit only to step into the gutter when authority in uniform clanks by. The teacher's endeavor, when choosing science work for the grade, should therefore be to present actual material and train children to draw independent conclusions.

The outline of the eighth-grade science work will show what material we present to the children. This material, we believe, has significance at their stage of development, and will, we hope, set their

minds actively to work. Most important, from our point of view, is the landscape of the Chicago area. In a former number of the Year Book, I have written at some length on the attitude of mind which physiography teachers believe develops from rich experience in reading landscape. (*Year Book*, Vol. IV., p. 56.) I need not repeat these opinions. Science teachers are agreed upon them. But I should like to speak of three factors which greatly aid the teacher in the science work in this grade. First of these is the mental attitude of the children. The outlines of the lower grades show that our children come to the eighth grade with a store of invaluable outdoor experience. They evince a gratifying bent for finding out reasons for themselves, calculated to make the teaching of physiography in this grade seem more like pointing them the way where, by due effort, they may appease their appetites, than like setting them an ungrateful task. To the class the work, beginning as it does with the making of a topographic map in the field and the reading and interpretation of topographic maps in preparation for field excursions, seems entirely new. But from every pupil entering our eighth grade from other schools, we have the wondering complaint that the others do this work better, because the complainant has "never had it before." What he sees his classmates in possession of is not knowledge of the topographic map, but a mental attitude. Their experience throughout their school life, in handling actual material, manifests itself in their eager relish of a novel task, before which the new pupil is more or less aghast. John's letter, a part of which follows, I insert, because it typifies this joy in working out a thing for oneself, which we believe we see in the children as a result of this year's science work. The letter was written two years after John felt the grade, after a summer spent in Massachusetts.

* * *

"I certainly appreciate your work in geology, physiography, etc. It enabled me to skip the physiography course at Lane, and has made every rock, ridge, or pond more interesting. This week I have been reading 'The Geology of Essex County,' by John Sears, of the Peabody Museum. As the book says, it covers every one-sixth of a square mile, first east to west, then west to east, north to south, south to north, northwest to southeast, etc., in great detail. With the book, and a large topographic map, with the rocks at surface colored, together with auto rides through the county, I got a pretty good idea of things, although I did get tangled up where the quartz-hornblende-diorite was cutting dikes in the hornblende-epidote-gneiss. From what I could make out, the county has first the pre-Cambrian

sedimentary rocks, which were bumped up into mountains two miles high by the intruding lava; that this lava was cut by more lava; that there were mountains cut by dikes, dikes by veins; that there was layer after layer of volcanic rock; that the land sank, the ocean covered it and formed thin sediments; that beaches were formed, now high and dry miles inland; then the land rose and the glacier came down from the north; scratches, drumlins, eskers, kames, were formed; and now the land is sinking. Trees may be seen far under water, and islands are smaller every day (more or less). The rivers are all drowned valleys, up which the tide runs. The book was a good deal too deep for me, but by reading 75% I understood 15% and will remember 5%. I wish I could find a book like that about every region I visit."

* * *

"Finding a book like that about every region one visits" is unfortunately not possible. But John's letter makes one hope that the year's work results in a belief in a changing landscape; an understanding of how land surfaces, by their materials, show their history, sea-bottom origin, emergence, submergence, etc.; and a power of first-hand observation and deduction. If it does so result, finding books is a secondary matter.

Some books, however, are needed through the year, and the second of the special aids to the teacher of eighth-grade science is the form of textbook we are working out. Of course, our primary text is the natural landscape. But during the winter this book is closed. A formal textbook is calculated to defeat the very purpose of the study, to substitute authority for original deduction. One wants to give the child the answer when he is eager with the question. The textbook answers questions before they are asked. The good teacher, of course, can conquer any difficulty, but the difficulty inherent in the use of a physiography textbook is so great that the writer has for some years tried to conquer it by avoiding it, by using no textbook whatever. The evil consequent upon this heroic remedy is obvious. The pupil has not material for reference and review such as he likes to have. Supplementary reading of great value is afforded by the *Illinois State Geological Survey*, especially Bulletins 7 and 11. We study about a hundred pages of these books with much profit. They can be used by a pupil to test the correctness of his conclusions, and are in so far good. But we are compiling a loose-leaf textbook, still far from complete, which will, we believe, have all the virtues and none of the vices of the regular textbook. Most of our lessons are reprints from the government survey papers, on representative areas.

When pupils have studied the topographic map of Donaldsonville, Mississippi, and have drawn a profile, and most of them are clear in their own minds that a river of this type flowing above the surrounding land is impossible, and that the government surveyors are having a joke at their expense, a lesson on the natural levees of the lower Mississippi is seized upon with avidity. The like is true after a study of the drumlins of Sun Prairie, or other interesting areas. Other sheets are mineralogy tables, or review lessons on the origin of common rocks. The sheets fit the children's portfolios, and are interspersed with their own maps, papers, and diagrams.

Mention of the children's portfolios recalls the third factor in making this teaching most agreeable to the teacher. It is the custom in our school for every child to keep all of his papers for the year in portfolios. It is also the custom for the teacher, each year, to make a portfolio of representative papers from each child. These papers are primarily for a record of the child's work, but they serve also as an inspiring source of information and interest for later classes. More than one pupil, trying to work out the meaning of the columnar section of Chicago, has been assisted by Marcel's explanation of the underlying works which he entitled *Story of the Underworld*. Ted left us some highly colored diagrams of an imaginary region in which every kind of rock appears, including a fabulously rich gold mine, occupying the lava-filled gravel-bed of an ancient river. He wrote a clear account of how all these phenomena came about, which has contributed materially to some boys' growing conception of Nature's slow, irresistible, impressive forces. Every paper contributed to the teacher's portfolio may be needed by some later class and merits proportionately earnest effort.

Besides these papers, we have such things as a series of large drawings of faults, copied from various government folios, and other diagrams. Last year's class made us a plaster model of Niagara Falls. The horizontal scale is about an inch to the mile, and the vertical scale about 10 times as great. When it was first brought upstairs this year, the class gathered close around it before school and plied the teacher with questions. They read the printed sheets about the region with the greatest eagerness, walking up constantly to the model to clarify some point about the glacier-filled course at St. David's, the old lake-bottom below Lewiston, Goat Island, the Gorge. Then they attempted to make a topographical map from the model. They had

already, at the very beginning of the year, surveyed a hill in Lincoln Park, and made a topographic map of it. They had used government contour-maps occasionally, drawing cross-sections, and interpreting the symbols; but the baffling difficulty of this task of making such a map from the Niagara model was illuminating to the teacher, who had thought that that part of the subject had been thoroughly taught. If the cast had rendered no other service than to show the teacher how she had overestimated her success in a piece of teaching, it would have been worth the labor spent upon it.

We found this model very useful also when we were trying to work out the topography of the Western Front. This study was based on Prof. Douglas Johnson's most interesting book, *Topography and Strategy of the Great War*. We made a large copy of his map of the Paris basin, and as soon as the class saw "the natural defences of Paris" and realized the topographical reasons for Germany's advance through the flat country of Belgium and France, they worked with keen intelligence upon a possible explanation of these five escarpments and the water-gaps through which all traffic to Paris must pass. The most difficult part of the reasoning in regard to a rising area of tipped strata comes, as physiography teachers know, when the pupil has to image the static condition of the upper course of a river during the period when the river is slowly sawing its way through a band of hard rock. The children's eagerness to understand anything connected with the war helped them over this difficulty, but they were also materially helped by study on the Niagara model of the area above the falls. Plainly, this part of the river is temporarily at base level. The class gave a morning exercise on the *Topography of the Western Front*, a stenographic report of which I insert here:

MORNING EXERCISE—THE WESTERN FRONT

Wednesday, April 10, 1918.

Alexis. Not only are we, and the peoples of twenty-three other nations doing all that is within our power to help the great ideal of democracy, but the sea, a million years ago, when it lapped its distant shores, rocking over what is today France, was bending its mighty power towards helping democracy. The enormous pressure that folded and contorted the rock, the majestic rivers that carved the land, all had their share in the great battle between autocracy and democracy. The reasons for this are to be told in what follows. Had it not been for the great resistance given by the Belgians at Liège, and the way in which the rocks lie in Northern France, the Germans would probably be in possession today of entire Europe.

You are now asked to come to a meeting of French generals, who will consult each other as to which way the enemy will be most likely to make its attack.

(Group of boys enter and seat themselves about a table, with a telegrapher at a desk near-by.)

First General (Charles). We are on the verge of war, and we have come to discuss how the enemy can get into Paris—how they will first advance on Paris. What is your view, general?

Second General (Preston). I think that a very probable way for the Germans to attack Paris would be through the second escarpment at Toul. They would do this, because their object is to take Paris as quickly as possible, before any other country can come to the aid of France. In order to do this, they will, of course, take the shortest route to Paris, which is through Toul, the distance being only 170 miles from there to Paris. Besides being the shortest route to Paris, Toul is also a very important railroad center, and it would be very easy to transport troops through Toul by the railways. Since the Franco-Prussian war, Germany has owned the city of Metz, and if she can capture the city of Nancy she will have two direct lines of march through Toul, so I do not believe the Germans would have a very hard time getting to Paris by this route.

Third General (Carter). As you say, it is only 170 miles to Paris from Metz. But even so, I do not think that the Germans would take this route. The reason for my saying this is that the fortifications around Nancy are very strong; it would mean a great loss of life if they should try to storm these fortifications. But instead, I think they would come up the Meuse river and attack Namur, and from there proceed up the river, even though the country is rough and difficult. When they come to Toul, they would have to come through Nancy, and the plan I am expecting would save them taking these two escarpments and they would be much nearer Paris. From the river Meuse they would then proceed to Paris by capturing Verdun.

Fourth General (Walter). I do not agree with you in this, General. In coming up the Meuse, the Germans would be going through Belgian territory. Therefore, if they are going to violate Belgium, instead of going by way of the steep escarpments, which are hard to ascend and very strongly fortified, they will cut across the southern end of Belgium, going around the northern end of the escarpments, which will bring them down in front of Paris. They will in this way go up the Meuse river only as far as Namur; they will plan to cut off the French army by surrounding it on all sides. In the meantime, they will try to send another army up through the northern part of Belgium and France and capture the seaports. This would not only enable them to have a good range on England, but also to keep other armies and supplies from coming by sea to help France or Belgium. After the French army is surrounded, it would be an easy task to capture Paris, so I think such places as Namur and Liège should be most carefully watched and the Belgians reinforced strongly if necessary.

First General (Charles). It is altogether improbable that they would do this, because I do not think there is a nation so low that it would risk its

standing in the world for a small military advantage. If they did go through Belgium, that would bring England into the war, and perhaps even America. And as for having them go through Belgium to the coast, it is impossible, as it is marshy and swampy in that region and heavy guns could not go through. Another reason is that a small army in Belgium could hold Germany for at least three days, so that England could get her forces together and stop the drive. But just the same, I would advise having strong forces at Nancy, Verdun, Liège, and Toul.

(The instrument on the desk ticks a message, and the operator hands a telegram to the general.)

General. Gentlemen: Germany has thrown away her honor and has declared war. They are coming through Belgium and are storming Liège.

(Exit generals to the defence of France.)

(Group of children on stage answering questions put by Edward.)

Edward. We are all interested, since the United States declared war on Germany, in the army and navy, perhaps more interested in the army and navy than in anything else. We are going to try to show you by twelve questions what the officers have to learn before they go over to France of the topography of the Paris basin, and we are going to show you how we think the Paris basin was formed. I will put the questions. You are to suppose that the pupils answering them are men in the Officers' Training camp.

First Question.—Imagine a rock surface covered through long ages by a shallow sea. Imagine changes in the temperature, depth, stillness of the water, and character of the incoming rivers.

William. Sedimentary rock would be formed, and the change of temperature would prevent or make coral. A rushing river coming into the sea would make conglomerate; the slower rivers coming in would make sandstone; and the very slow rivers coming into a shallow sea will bring down clay and lay it in the sea bottom, and make shale.

Second Question.—Imagine earth shrinkage, causing violent faulting and contortion of the rock, and imagine emergence of the rock in the east and gentle bowing to the west.

John. In case of rock contortion and gentle bowing in the west, a portion of the rock will project above the surface of the sea, and the softer rocks will be washed away by the rain water.

Third Question.—Imagine recession of the sea from the entire area. What would be the first cause of change?

Ruth. After the sea recedes, the rivers will be the first cause of change.

Fourth Question.—How long will these rivers work?

Barbara. The rivers will work until they cut down to the base-level.

Fifth Question.—What will be the character of the rivers at the close of this period?

Ruth. At the close of this period the rivers will be old; they will be slow and meandering.

Sixth Question.—Imagine a slow uplifting of the entire area. What will happen at the mouths of the rivers?

John. At the mouths of the rivers falls will be formed.

Seventh Question.—Where will the rapid cutting be checked, and for how long?

Margaretta. The rapid cutting will be checked when the falls reach a hard layer of rock, and then a slow cutting will continue until the falls have again reached a softer layer of rock when the cutting will be much swifter.

Eighth Question.—What will happen, meanwhile, below this point?

Ruth. Below this point, the rivers and their tributaries will have been cutting the surface down to the base-level.

Ninth Question.—What will be happening above this point?

Barbara. Nothing will be happening above this point, because the cutting is checked, and the rivers can only meander in their beds.

Tenth Question.—What will happen above the hard rock as soon as the river has sawed through and made a gap?

John. As soon as the river cuts a narrow gorge through the hard rock and hits the soft rock, it will cut much faster. It will meander around in this soft rock and tributaries will form and will cut away all the soft rock, until it has the same level as the river-bed as it cuts through the hard rock. In other words, it will hollow the entire area of soft rock out, leaving the hard rock as a great plateau. Then it will cut through the next layer of hard rock and repeat the action. That is, it will make a cliff, or escarpment.

Edward. This is what we meant when we said, "A million years ago the sea was working for the ideal of democracy." These escarpments have played a great part in checking some of the great German drives. At Verdun the escarpment near there probably did as much as the French army to stop the German drive. The topography of the land around Verdun will be explained a little later.

Elizabeth. The western front today starts in the northern part of Belgium, at Ypres, and goes straight south at the east of Lille, and then straight on down west of Amiens. Then it goes straight east to Verdun. It has been very hard for the German troops to take these escarpments, because the English artillery can mow them down before they can make any headway. They were able to get Lille because the hills were not so steep up there and they got up the escarpment before they were beaten back.

Caroline. One of the largest battles of the war was Verdun, and happened in 1916. The country around Verdun is a network of hills and valleys, very similar to the north shore of the Chicago area except on a large scale.

The Germans attacked three different times. First over the escarpment on the west of the Meuse. This attack was a failure, because the French had felt that it was necessary to command the hills surrounding Verdun instead of the city itself, and Meuse valley was heavily fortified. The Germans could only take certain cement government roads, and consequently, since the French had guarded the positions, the Germans could not move without heavy losses. For this reason this swampy area is called the blood-soaked plain of the Meuse.

Another way the net work of ravines and ridges helped the French was in the second attack, when the Germans tried to go over the escarp-

ment and cross the Meuse river. We do not know much about this, except that it also was a failure.

The third attempt, the Germans tried to go up the river to Verdun and capture it in that way, but this also was unsuccessful.

The reason that the Germans wanted Verdun was not only because of the military advantages, but also for the prestige, because they felt that if they were successful in this battle the war would be practically over, and they wanted the neutral countries, of which there were a great many (our own among the number), to come in and side with them. This battle shows how the topography helped the French, as it has in almost every large battle that has been fought.



TOPOGRAPHIC MAP OF HILL IN LINCOLN PARK
(Contour intervals 2 ft.; scale, 20 ft. to 1 in.)

From this year's portfolio, I take Margaretta's paper on *The Making of a Topographic Map*, which will, I hope be clear to succeeding classes. Before we mapped the hill, we had found the



SETTING THE PLANE TABLE

elevation of its highest part by measuring up from the lake, datum 581.

* * *

Now that we have the height of the hill, we are ready to work from it to find the elevation of various points, in order to make a topographic map. The instruments we use are as follows: The plane-table, which was made by some high-school boys, and consists of a drawing-board screwed to a tripod; a level, like a carpenter's level, with sights on it, so that another object of the same height may be sighted by looking through the hole in the first sight and moving the object until it is on the same level; a chain or tape about fifty feet long; a ruler; a pole, which is about six feet high, painted in red and white stripes, so that it can be well seen; a plumb-line; a compass; a paper and pencil.

We tack a sheet of paper to the plane-table, set our table up a short distance down the hill, level it and orient it. To level the table, we put the level on top of the drawing-board, and move the legs of the tripod in and out until the bubble of the level is in the middle. Then the level is placed at right angles to its former position and the table leveled in that direction also. To orient the table, a compass is laid on the corner the first time the table is set up, and a line is drawn north and south. Every time the table is set up thereafter, the compass is set on it and the table is turned so that this line still runs north and south. We worked in groups of about five children each, so that every one could have a chance to see and to work.

Now that our table is set up, we are ready to take the back sight. We put our pole on the bench-mark, the top of the hill. We look through

the sights on the level, and the girl at the pole moves her hand up and down until it can be seen on the thread of the second sight. The distance of the hand from the ground is then measured and if it is one foot, we know that the elevation of the sight is 618.5 feet, because our bench-mark is 617.5 and the sight is level with the spot on the pole, which is one foot higher. If when we drop our plumb-line we find that the drawing-board is three feet from the ground, and the thickness of the board and the level up to the sight is six inches, we know that the elevation of the point where the plane-table stands is 3.5 feet lower than the sight, or 615 feet. In order that we may put the dot on our paper, corresponding to this point, we must measure the distance and mark it to scale. We find the distance to be 30 feet. We use a scale of 20 feet to the inch. Our dot will therefore be $1\frac{1}{2}$ inches away from the dot which represents the top of the hill. We put our ruler on the paper so that it points from the dot representing the bench-mark directly at the pole. Then the new dot is made, 1.5 inches from the bench-mark, and marked with its elevation 615 feet. We can now move our pole. Our next observations are easier, because we find the elevation of the spots where the pole stands instead of the spot where the plumb-line falls. We can move our pole and make many dots before we move the plane-table.

The groups all go in different directions, and after they have all covered their sections with dots, the papers are laid together with their center dots together, and the north and south lines parallel. Then, by means of transfer-paper, the dots are all transferred to one sheet.

Now that we have the dots all on one sheet, we are ready to draw the contour-lines. As the top of the hill is 617 feet and our contour interval is 2 feet, our first contour would be at 615 feet. If there are any dots at that elevation, we draw the line through them. We draw it half-way between the 616-foot dot and the 614-foot dot, and two-thirds of the way between a 617-foot dot and a 614-foot dot. In this way we draw our contours every 2 feet. Any one can see from this map the shape and size of this hill and which slopes were steep and which gentle.

* * *

These are war times. Teachers now more than ever may be thankful if their curriculum is elastic. Every subject—history, literature, music, mathematics—has a fresh appeal for pupils in the lurid light of the world war, and physiography not the least. River piracy caused the great Toul gap; the incised meanders of the Aisne cost the British army countless lives; the Meuse is blood-soaked on account of its impermeable clay; the Verdun region is like our North Shore; the map of the Champagne Front shows a bewildering mass of topographic detail, every line of which may have life and death significance. Boys and girls want to know everything about the war. The subjoined outline does not indicate the new emphasis that the



MEASURING THE ANGLE OF THE ANTICLINE AT THORNE CREEK

(Here we saw also a terraced river valley, showing a drop from the former base level)



MODELING A RIVER VALLEY IN THE SAND OF THE PLAYGROUND

(The model is to make clear three ways in which the flat of a flood plain grows, and two ways in which a meandering river changes its course. This outdoor modeling has proved itself very useful in clearing up children's images)

war gives to Physiography teaching. But it is an axiom of teaching that any subject should be approached through the children's interests. Their deep interest in the war must be used to obviate the jingoism, the hysteria, the poison of hatred that saddens their elders, by giving new images, new material for judging, increased power.

TOPICAL OUTLINE OF EIGHTH-GRADE SCIENCE

(a) Landscape Reading in the Chicago Area.—Excursions to Winnetka, Sag, Cragin and Galewood, Thorn Creek, end of Rose Hill bar, Summit, Worth. (*Year Book*, Vol. IV, p. 56.)

(b) Making of a Topographic Map of a Hill in Lincoln Park. (See Margareta's paper).

(c) Study from the Topographic Maps.—About a dozen typical areas are studied, using the loose-leaf text to verify conclusions and correct mistakes.

(d) Use of Areal, Structural and Sectional Maps.

(e) Origin and Descent of Rocks.—Igneous rock and origin of the earth. Sedimentary rock and its origin from igneous rock. Mantle rock, mineral veins, organic rock. Metamorphic rock and earth-folding.

(f) Detailed Studies.—Disintegration, transportation, deposition, solution, precipitation, cementation, crystallization, and the part of each in rock-making.

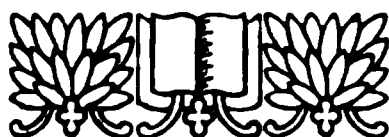
(g) Work of Waves, Flowing Water, Winds, General Weathering, Vulcanism, Earthquakes, Diastrophism.

(h) Physical Properties of Minerals.—Hardness, luster, tenacity, structure.

(i) Specific Gravity.

(j) The Nature of the Hypothesis.

NOTE.—The work varies from year to year. The seventh-grade science plan is new this year and the incoming class will have covered topic (e) and thereby gained time for more advanced work in eighth grade.



SCIENCE IN THE HIGH SCHOOL

High-school science is at present in a marked state of flux and change. The need for reorganization is generally felt, though the character of the reorganization which shall bring about the desired results is by no means clear. The number of sciences offered to high-school pupils has greatly increased, but as yet little sequence or logical development from one course to another has been developed. There is wide divergence in the selection of subject matter, and in the methods of its presentation. Reorganization is also taking place within each of the individual science courses, in the effort to secure a better selection of subject matter and more efficient methods of teaching. For this reason, a brief statement of the aims and purposes of the high-school science courses, as taught in this school, and also of the principles governing the selection of material and methods of presentation, is in order.

AIMS AND PURPOSES OF HIGH-SCHOOL SCIENCE

1. Science courses aim to give the pupil an intelligent understanding of the significance and importance of science to our modern life. The success of democracy depends upon the intelligence, insight, and social responsibility of all its citizens. Science instruction is indispensable to breadth of view and the intelligent discharge of the duties and responsibilities of citizenship.

2. The courses in science should develop specific interests, habits, and abilities. Modern psychologists have seriously called into question the possibility of training those general abilities called powers of observation, interpretation, discrimination, deduction, imagination, etc., as such, but the high-school science courses do call for the exercise of specific powers of observation, for specific habits of industry and accuracy, and for skill in manipulation of a particular sort. It is a vital characteristic of good science instruction that it should stimulate the pupil to more direct and purposeful activity and to a higher realization of his own powers and abilities and the pleasure and profit to be found in their exercise and development. The character of science material, its immediate bearing on the common things

of every-day life, gives to science study an unusual opportunity to develop the power of initiative and independent thought. This is the highest of educational aims, for it is only by the increments of personal achievement that society advances.

3. Science study should supply a fund of information, useful, practical and of immediate service in home and daily life. This knowledge should be of direct assistance to the pupil in enabling him to select more intelligently and surely future vocations or courses of study, and to adjust himself more easily and wisely to new situations. By useful information is not meant that which is immediately useful only, or practical in a narrow sense, but all that which makes for a better understanding of the conditions, institutions, and demands of modern life.

Science study also opens the door to many useful and pleasureable avocations. Thus it provides for the intelligent and profitable use of leisure time.

4. Science study possesses especial value, by reason of the experimental work which gives the pupil a varied contact with actual materials of many kinds. This active sort of experience is in marked contrast with the sort obtained from books, diagrams, maps, and other symbolic materials, so prominent in most subjects of study.

5. Science study possesses cultural, esthetic, and moral values. A false dualism would classify the subjects of the curriculum as esthetic and cultural on the one hand, and practical and materialistic on the other. On the contrary, all subjects are cultural to the degree in which they develop appreciation, and all are esthetic to the degree in which they open the eyes to the perception of new beauty and increase the power to enjoy the wonders of the world in which we live. Science study, properly conducted, develops an appreciation of the inner meanings and connections of things and the interrelation of facts and phenomena, an appreciation of the service of science to the life and civilization of our time, an appreciation of the slow, painstaking efforts and tremendous toil with which scientific progress has been accomplished, and an appreciation of the privileges, duties, and responsibilities which living in this age of science involves. The natural sciences, especially, since they deal directly with nature, should open the eyes of the pupil to the beauty and wonders of nature and the divine economy which has shaped and fashioned it all. These cultural and esthetic values of science relate directly to moral values

and are the bases of moral concepts and the well-springs of moral action, in the building up of individual character and the refinement of individual ideals.

PRINCIPLES CONTROLLING THE SELECTION OF MATERIAL AND METHODS OF PRESENTATION

The most notable innovation in high-school science teaching in recent years has been the introduction of the project-problem method. As has been pointed out in the preceding sections of this course of study, the questions, problems, and activities of the child have been taken as the basis for all the science work of the school. This is substantially what is meant by the project-problem method of teaching science, and as such it has been the method for the science work of the school from its foundation. In the pages which follow, the attempt is made to show clearly how this method has been worked out.

The adoption of this general method as a basis for high-school science involves a considerable modification of the methods usually followed. The assignment of lessons can no longer be made, as the "next chapter" or "the next ten pages." Instead, the assignments must be made on the basis of questions or problems which appeal to the pupil as worth knowing. This conception of the worth-whileness of the work is the motive which secures more purposeful and more efficient study, a more interested participation in recitations and class discussion, a clearer understanding of the laboratory work as an integral part of the work of the course, and one of the chief means for answering the questions and problems under consideration.

Teaching science by this method requires adequate library facilities, including several copies of each of the standard textbooks, current scientific magazines of a non-technical sort, many reference books and articles on special subjects, written in a style calculated to appeal to the adolescent mind. Assignments should be made to all these sources of information, where the answers to the questions and problems selected for study can be found. This method requires a large measure of co-operation between pupil and teacher, and recitations which are truly socialized, because the pupils are really contributing towards the solution of problems common to all.

From an ideal standpoint, pupils should take the initiative in raising questions and problems, and in directing their own study and

investigation. It has been the experience of the writer, however, that the pupils are unable to initiate at the outset very many of the problems and projects which belong in the more advanced courses in the high school. Their interest has first to be aroused, the subject opened up, and the necessary impetus given to make the class realize its value to themselves. This can be done by the wise use of demonstration experiments, by emphasizing the relation of the work to community needs, school and home activities, local industries, and commercial applications. The service of members of the class, in securing useful material for experiments, in collecting special information for class use, in reporting on special topics or additional experiments, assists in securing this vital element of co-operation of teacher and class.

The general condition of unrest and the search for a better organization of the science work has been reflected to some degree in our own high school. Courses in physiology, physiography, biology, botany, and general science, have all had a temporary place in our curriculum, and then have been discarded, so that for the present year we are offering domestic science, physics, chemistry, and a brief course in hygiene. The other science courses have hardly had an adequate opportunity to prove their worth, for the lack of laboratory facilities and room for necessary equipment has handicapped these courses. This reduced number of science subjects is partly offset by the fact that both physics and chemistry are taken by a very large majority in every class, while one of the two is required of every pupil. Further, the science work which has been given in the elementary school has furnished a background of experience which has made it possible for pupils to pass into the high-school science courses without the difficulties which usually attend the transition from grades to high school. The lack of a course in biology is a serious deficiency in our high-school science course, but one which it is difficult to correct until enlarged facilities make it possible to undertake it upon the proper basis.

HYGIENE

The following course in hygiene has been given the past few years by the directors of physical education to the freshmen class of the high school, the boys and girls being in separate groups.

The study of hygiene must have for its basis some knowledge of the structure and function of the body and its organs, hence enough anatomy and physiology to make the subject intelligible must be included.

Much of the course as here outlined is quite elementary in character; it could, and in my judgment should be given in the elementary school, beginning perhaps in the fifth or sixth grades, or even earlier, where the awakening curiosity about the body, its functions and care would supply a direct motive for this study. There is no good reason for postponing this study until the high school is reached, and there are many good reasons for beginning it earlier. First, the fact that personal habits are more easily and permanently fixed during the plastic years of younger childhood. If study of the care of the body is to result in setting up sound habits of hygienic living and right ideals of physical fitness, it would seem wise to make children intelligent along these lines before wrong or careless habits are fixed, and when it is easier to implant good habits. Secondly, it is in the earlier grades that there is normal curiosity and genuine interest in the body, and children have many questions which should be answered carefully, wisely, and definitely.

Children of the earlier grades can quite easily grasp the laws which underlie the structure and care of the teeth, the main facts of digestion, the choice of foods and the hygiene of eating; the reasons for cleanliness, the value of exercise and its effects upon every part of the body.

The seventh and eighth grades can understand the main facts of the structure and care of the respiratory and circulatory organs, the care of eyes and ears, the cause and treatment of common colds, the seasonal changes of clothing, etc.

It is in these grammar grades that the majority of the girls mature and the boys enter their pubescent period, hence it would seem that this is the place to give to boys and girls, in separate groups, careful instruction in the meaning of the new functions which now develop,

so that they may understand the physical changes and new emotions which now manifest themselves, and be taught intelligent care of themselves at this crucial time of life.

If the topics here suggested were covered broadly in the elementary school, the field would be clear for work in laboratory physiology in connection with a high-school course in biology, to round out the study of the structure, function, and care of the human body.

Some such course as this is the ideal toward which we are looking. Lack of space, laboratory facilities and program difficulties have so far prevented us from realizing this ideal. We have, however, hope for the future.

I. *General Talks on the Skeleton*.—Anatomy: a brief study of the general structure of the body.

II. *Digestive System*.—Foods and food elements, selection of foods for a meal. Appetite; exercise; cooking. Regularity of meals; mastication. Over-feeding; drinking with meals. Beverages, clothing and posture as they affect digestion. Constipation; diarrhea (cause and treatment); drugs.

III. *Teeth*.—Anatomy; causes of decay. Tooth powders, brushes, mouth-washes.

IV. *Respiration*.—Brief anatomy of organs of respiration. Interchange of gases (very elementary). Care of respiratory tract; exercise as it affects respiration.

V. *Muscular System*.—Exercise: kinds, purposes. Rest; curvature of spine; chest deformities.

VI. *Nervous System*.—Brief description; sleep, rest, and relaxation. Its relation to digestion, etc.

VII. *Circulation*.—Brief anatomy of heart, arteries, veins. Description of the mechanics of circulation. Blood—its composition. Adjustments of circulation to every-day needs.

VIII. *Nutrition*.—The sources of power and heat.

IX. *Eyes*.—Protection and care. Common ways of straining. Common defects; glasses.

X. *Ears*.—Care of outer ear. Colds; inflammations; running ear; earache.

XI. *Skin*.—Structure; use; care; baths (kinds and purposes). Face-powders, lotions, soaps. Hair, nails.

XII. *Common Colds*.—Cause; prevention; care.

XIII. *Feet*.—Flat foot; arch troubles; shoes.

XIV. *Reproduction*.—Plants; fish; frogs; birds; mammals. Brief description of the human organs.

(*Girls' Class*) The menstrual function; hygiene of this period.

XV. *Infections and Contagious Diseases*.—How diseases are carried: by water supply; milk supply; common eating and drinking utensils; promiscuous kissing, etc. Need of segregation; disinfection; vaccination; inoculation.

XVI. *Clothing*.—Uses; decency, warmth, ornament. Clothing and the conduction of heat. Clothing and perspiration. Clothing next the skin. Outer clothing. Fabrics.

XVII. *Common Emergencies*.—Cuts; bruises; burns; fainting; etc.



DOMESTIC SCIENCE

Let me suggest that every housewife who practices strict economy puts herself in the ranks of those who serve the nation. This is the time for America to correct her unpardonable fault of wastefulness and extravagance. Let every man and woman assume the duty of careful provident use and expenditure as a public duty, as a dictate of patriotism which no one can now expect ever to be excused or forgiven for ignoring. (Proclamation of April 15, 1917.) *President Wilson.*

The work in domestic science is given in the belief that every girl should have before her the highest ideals of home life and the great social service it has always rendered. It is hoped that she will gain a comprehension of the principles of home-making and the ability to put them into successful operation. In the present crisis in our country's history the knowledge of management and economy in the home means for the girl service to the nation.

The course in domestic science covers two years in the high school. The work in foods of the first year leads naturally to the broader problems of the home which form the basis for the second year's work. In the first year of her work the girl deals with one of the big problems of the present day, that of economy in the home. She studies the selection and purchasing of foods from the standpoint of expenditure; she visits markets and related industries; she prepares and serves suitable meals as a foundation for her work in food values; she performs practical experiments in food cookery and keeps a careful record of them. Right habits of work and the importance of sanitation are especially stressed.

The proclamation by the president, given at the beginning of this article, forms the basis for all the problems of this year.

The following shows these problems and the opportunities for vitalizing the work:

Problem I.—What can I learn about the preservation of food this fall which will help in the campaign for preventing waste? Lessons in canning and preserving fruits and vegetables.

OPPORTUNITIES FOR VITALIZING WORK—

- (a) Sending products to the Red Cross.
- (b) Taking products to families in need.
- (c) "County Fair" and other food sales, the profits going to some deserving charity.
- (d) Using products of class work for school luncheons, parties, etc.

Problem II.—What can I learn this winter about preparing and serving meals so that I can really help “to practice strict economy?”

- (a) What must I know of the sanitation of foods if I am to do my share in keeping everyone in good health?
- (b) How can I buy foods and be sure that they are the best and yet the most economical?
- (c) What ought I to know of food values to be sure that I am supplying the nourishment that the body needs?
- (d) What must I know of the preparation and cooking of foods to be sure that I am obtaining the best from them?
- (e) What ought I to know about serving meals so that they will be simple and pleasing?
- (f) If the table is to be attractive, I ought to know about laundering linens. What can I learn of this?

OPPORTUNITIES FOR VITALIZING THE WORK—

- (a) Serve meals for special groups of teachers or pupils in the school.
- (b) Serve the parents a luncheon during the year.
- (c) Co-operation in the home.

Problem III.—My mother is very busy with Red Cross work. What can I learn about the care of the baby that will make it possible for me to take charge when necessary? Lessons in bathing the baby and in the care of the baby's bottle.

OPPORTUNITIES FOR VITALIZING THE WORK—

- (a) Co-operation with day nurseries and settlements.
- (b) Co-operation wherever possible in the home.

Problem IV.—Nurses are being called away every day. What can I learn of the ordinary care of the sick in the home that will make me feel that I am doing my share at this time? Lessons on preparation of invalid's tray and the care of the sick-room.

OPPORTUNITIES FOR VITALIZING THE WORK—

- (a) Co-operation with a hospital or institution.
- (b) Co-operation with Red Cross work.
- (c) Co-operation in the home.

The second year's work has been taken up only by a limited number of girls during one year. This course was given before the problem method had been so thoroughly worked out and for this reason, merely the larger problems are indicated. These are varied in nature and are selected as they seem suited to the needs of the class. They include not only the application to the home of such scientific principles as heating, lighting, and ventilation, but also an appreciation of household furnishing and decoration. In the second half of this year the class studies simple problems in dietetics and meal-planning, and each one works out a budget for her own family.

PHYSICS

The course in physics is given in the eleventh grade, and continues throughout the year, with a time allotment of six periods a week, two of which are consecutive for laboratory work. The class of twenty-four is divided into two sections for the laboratory work, and also for one of the other single periods, so that it may be utilized for either experiment or recitation. From the standpoint of subject matter, the major topics covered by the recitations and experimental work do not greatly differ from the standard high-school course; nor, indeed, can it be otherwise, since the course must meet the requirements of colleges to which our graduates are certified, and also be an adequate preparation for pupils going up for College Board examinations.

There is no need, therefore, in presenting in this article the subject matter of the course by listing the topics studied; but rather it will be the purpose to show wherein methods of presentation have been developed which are in harmony with the fundamental principles which have been accepted as controlling all science work throughout the school, to indicate to what extent we have been successful in finding projects and problems in physics which the pupils have made their own and which they have pursued with that eagerness and zest which is the hall-mark of every project. Much has been written in favor of the project method of teaching science, and especially as a method for better physics teaching; but lists of projects, problems, questions, experiments, etc. which really work in the classroom and laboratory are difficult to find in print, and still more difficult to discover for oneself. Such lists will never be adequate for the needs of physics teachers until some plan is devised, whereby there may be a pooling of information and the results obtained by individual teachers may be made available to all. As a contribution in this direction, and not as a finished piece of work, this article is written. It is the result of several years' effort to break away from the time-honored method of teaching physics by the assignment of lessons from textbook and laboratory manual, and to discover projects by which the interest of the pupil may be aroused and all his powers focused for educative effort. The transformation is not one which can be effected all at once. It is only by making a beginning here and there and gradually extending the number and scope of projects that in time the whole of physics teaching may be successfully remodeled.

The adoption of the project method for physics teaching at once makes impossible the usual method of assigning lessons, and necessitates the use of textbooks for reference purposes, and the use of a variety of the latter as a source of information on many topics. A well-chosen set of reference books will not only contain the necessary information, but contain it in a way which is attractive and interesting to boys and girls of adolescent age. It is extremely important that assignments should be clear and definite. Nothing is more discouraging to the pupil, or destructive of his interest, than to be given hazy assignments, to come to feel that neither he nor the teacher knows exactly what is expected. It is of vital importance that the teacher should have gone over the ground carefully, and that assignments to reference books should be as definite and clear to the pupil as possible.

This year pupils were asked to buy a standard textbook, in order that they might be sure of having a reference book, one which they might use most frequently. At the end of the article is appended a list of books which have been found useful and which are kept upon a special shelf in the grade room, where they are readily available for reference and use in study periods. Each book is provided with a long narrow strip of cardboard, bearing the title and library number of the book. A pupil taking out the book over night, or out of the room for study, signs his name on the slip and places it upon a spindle near the reference shelf. On returning the book he crosses off his name on the slip, replaces it in the book and returns the book to the shelf. This simple system prevents the abuse of reference books, renders checking them up easy, and at the same time keeps them readily available.

The following is a list of topics, with correlated projects, problems, questions, excursions, and experiments, which have been used in daily assignments. A number of these are given in full, with the references, to illustrate the method, while others are only listed. Many questions of this sort may be found at the ends of chapters in the more common textbooks, where they are placed for purposes of review. It is the raising of these questions in the mind of the pupil prior to the assignment which makes them worth while and significant. To the degree that the student makes them his own problems and seeks the answers by reason of his own desire to know, to that extent they become projects and the pupil's efforts educative. This is the vital distinction between the old and new methods. The information is sought as a result of a question which the pupil desires to answer, and the question is not given as a test of the thoroughness with which facts and prin-

ciples have been learned through the reading of a textbook. To this extent, the project method is the reverse of the plan usually followed.

Measurement.—How do people measure things?

How does the grocer measure vegetables? onions or potatoes? vinegar?

How does the druggist measure out powdered medicines? liquids?

What kind of weights does the jeweler use in determining the value of diamonds and other precious stones?

Visit a grocery, a drug-store, and a jewelry shop, and get all needed information.

What other units of measurement are used at home?

Make a list of all units found, and show how they are related.

Reference.—*Measurements for the Household* (Circular, Bureau of Standards, No. 55).

How is the public protected from false measurements and uniformity in weights and measures secured?

What are some common ways by which dishonest merchants and dealers cheat in weighing and measuring commodities?

How does the city government protect us against these practices?

What precautions should we adopt to further protect ourselves?

Excursion to City Sealer's office to hear of the work of this department of the city government, and to see exhibits of confiscated scales, weights, and measures.

Reference.—*Measurements for the Household* (Circular, Bureau of Standards, No. 55), pp. 1-36, 136-143.

Why is the metric system used for all science work the world over and constantly coming into more general use?

How many centimeters tall are you? How many meters?

How many kilograms do you weigh? How many grams?

What does milk cost per liter?

How many miles is it to Evanston? How many kilometers?

What is the meaning of the prefixes *milli-*, *centi-*, *deka-*, *hecto-*, *kilo-*, as used in the metric system?

Problems 1, 3, 4, and 5, p. 7, *Millikan and Gale*.

References.—*Millikan and Gale*, pp. 1-7; *Black and Davis*, pp. 1-8.

Pressure in Liquids.—What kind of pressure does a submarine withstand? Is there any limit to the depth to which a submarine may descend?

How does the submarine dive and emerge at will?

What is the record in deep-sea diving? What difficulties does the diver experience in his work? Would a diver experience any more difficulty in working in Salt Lake than in Lake Michigan? What has the density to do with it?

Laboratory experiments to answer above questions. Determination of change in water pressure per vertical foot, by using a pressure gage and noting readings at taps on the various floors in the school building. Experiment with balancing columns performed by a part of the class.

Problems 2, 3, 6, and 8; pp. 14 and 15, *Millikan and Gale*.

References.—*Millikan and Gale*, Chap. II; *Black and Davis*, Chap. III; *Mann and Twiss*, Chap. IV; *How it Works*, Chap. XVIII; *Twenty Thousand Leagues Under the Sea*; magazine articles and newspaper clippings on submarine construction, operation, and dangers.

What maintains the pressure in the city mains? Why is a constant pressure necessary?

How does the hydraulic elevator work?

How does the hydraulic press operate?*

Excursion to visit a pumping-station in a down-town office building to see pumps and elevators in operation.

Buoyancy or Principle of Archimedes.—When you float or swim in water, what becomes of your lost weight?

Why does a heavy stone seem so much lighter when lifted under water?

What is your density if you can just float in water? What is your volume in cubic feet?

Why does iron float on mercury? (Demonstration experiment to show it.) Are there any metals which would sink in mercury?

Laboratory experiments to find density of quartz, aluminum, pine, gasoline, milk, and cream.

Problems 1, 2, 6, 9, 10, 11, 12, 13; p. 25, *Millikan and Gale*.

The Atmosphere.—How much pressure does the air exert?

Demonstration experiments.—A square can is crushed by boiling in it a small amount of water, fitting with a tight stopper, and subsequent cooling. A pupil is lifted from his feet by the use of Magdeburg spheres, and other more familiar experiments.

Why does the barometer change from day to day?

*In the class discussion of the hydraulic press, an interesting description of an oil press for removing car wheels from axles was given by a member of the class, who had seen it in operation at the West Side Car Shops.

What relation is there between the readings of the barometer and the weather? What may be expected if the barometer falls rapidly? Rises rapidly?

What causes a cold wave? A hot wave?

Observe the recording barometer (barograph) and the changes from day today.

Compare your observations with the weather forecast and the weather maps posted in the hall.

References.—*Millikan and Gale*, pp. 26-34; *Black and Davis*, pp. 75-93; *Our Own Weather*; *About the Weather*; *Book of Wonders*, pp. 38, 40, 213, 243, 398, 400; *Careers of Danger and Daring*; Chap. on *The Balloonist*; *Story of Great Inventions*, parts of Chaps. IV and VI; set of weather maps showing course of the record blizzard and cold wave of January, 1918.

Project.—Construction of a water barometer in main stairway of the school.

Moisture in the Atmosphere.—What is the cause of the discomfort one feels on a muggy summer day?

How do people in warm countries cool their drinking water without ice?

Explain the "sweating" of the ice-water pitcher. Why is it not seen in winter?

In very cold weather, any unfrozen body of water appears to be steaming hot. Explain this phenomenon.

What becomes of the white cloud from the exhaust-pipe of a steam engine? Is it steam?

What are the atmospheric conditions which produce rain, fog, dew, frost, snow, and hail?

References.—*Millikan and Gale*, parts of Chap. IV; *Black and Davis*, pp. 210-217; *Mann and Twiss*, pp. 125-131; *About the Weather*, Chaps. XII and XXI; *Our Own Weather*, Chap. XIII; *Circular, Bureau of Standards*, No. 55, Chap. VIII.

Why is it desirable to have the relative humidity in school and living rooms between 40 and 60%?

Why is it more difficult to maintain a proper humidity in severe winter weather?

What means can be used to increase the moisture content of the air we breathe?

Experiments on cooling by evaporation, determining the dew point, and testing the relative humidity in various rooms of the school, using sling-psychrometer.*

*For a fuller account of the study of relative humidity, see article in *Year Book IV, School Heating and Ventilation,—A Study in Applied Physics*, p. 126.

Applications of Atmospheric Pressure.—Why not fill automobile tires with water? How does a gas differ from a liquid?

Why does a balloon go up? What determines its lifting power?

An observation balloon is constructed to lift a total weight of 350 lbs.

How many cubic feet of hydrogen must it contain?

Study the working of lift- and force-pumps, the air-brake, and the siphon.

Demonstration experiments and models used in explaining these appliances.

Laboratory experiment to find out the effect of pressure on a gas (Boyle's Law).

Force.—What kinds of force are there? Are any of them visible?

Gravitation is said to be the "universal" force. Explain.

What keeps an aeroplane from falling?

Why is it dangerous to stand upright in a canoe?

What is meant by "center of gravity?" Where is this center in a meter stick, a gate, a hoop, any body of regular shape?

Accelerated Motion.—What is meant by the term "pick up" as applied to an automobile?

If an automobile accelerates at the rate of 4 ft. per sec., in how many seconds will it acquire a speed of 60 miles per hour? How far will it travel in gaining this speed?

A street-car has a negative acceleration of 4 ft. per sec. in stopping. How far from the corner must the motorman apply the brakes in order to make the stop properly, if his car is traveling at the rate of 30 miles an hour?

Experimental derivation of the laws of falling bodies with Hawkes-Atwood machine.

Problems 1 to 12, pp. 99-100, *Millikan and Gale*.

Molecular Forces.—Why does oil ascend in a wick and ink in a blotter?

Why should gardens be frequently cultivated in dry weather?

Why is charcoal used in filtering water and as a lining in the walls of refrigerators?

Why does falling water separate into small drops? Explain the appearance of a drop of water on a dusty surface.

Temperature Effects.—What kind of thermometers are there? What kind would you take on a polar expedition?

Is there any advantage in using a Fahrenheit or a Centigrade thermometer?

How are low temperatures obtained in the laboratory?

Demonstration experiments on artificial cooling.

Laboratory experiment on finding the corrections for the laboratory thermometers at the freezing- and boiling-points.

Why do not lakes and rivers freeze from the bottom up?

How are fine watches made independent of temperature changes?

Why does the school clock tend to gain time during the winter months, and especially over the week-ends? How may this be corrected?

Why is a silver knife placed in a glass jar when fruit is being canned?

Formerly the wires which carry the electric current into an incandescent bulb were of platinum. Why? An alloy is now used instead of the platinum. What must be true of the way this alloy expands and contracts?

Mechanics.—Is there any such thing as perpetual motion? Is a perpetual-motion machine a possibility?

What is meant by “work” as this term is used in physics?

What simple machines are used in moving heavy weights?

All complex machines are built out of simpler parts—levers, wheels, axles, cranks, worm-gears, pulleys, etc. What ones are found in the bicycle? The sewing machine?

Examine the mechanism of your victrola. What simple machines can you recognize? How is the speed kept constant?

What is meant by the term “mechanical advantage?” What is the “mechanical advantage” of the simple machines mentioned above?

Laboratory experiments on the principle of moments, levers, pulleys, and inclined plane.

Excursion to the West Side repair-shops to see machines of many kinds.

What is meant by “white coal?” How is it utilized?

What kinds of water wheels are there? Under what conditions does each kind operate to best advantage?

“All energy comes from the sun.” Check up on this statement for all examples that you can think of.

How is power measured?

References.—*Millikan and Gale*, pp. 147-152, 156-159; *Black and Davis*, pp. 71-72, 37-39; *About Engineering*, Chaps. III, IV, and XII; *Mann and Twiss*, Chap. V.

Heat.—What is heat? How is it measured? What relation has heat to friction?

What metal would you use to make a hot-water bottle?

Why is ice a better refrigerating agent than cold water?

Why does not all the snow melt when the temperature gets above 0° C.?

What relation has Lake Michigan to the Chicago climate?

Why does live steam produce more severe burns than boiling water?

Laboratory experiments on heat of fusion of ice and vaporization of steam; half of class doing one and half the other.

How is ice made? Excursion to ice plant of Consumers' Company to answer this question.

Investigate your home heating-plant and find out how it works. Get full information and make a diagram, with explanation, for your notebook.

What is good ventilation? How is it secured in the school? What are the difficulties in our system?

Excursion through the school plant to see boilers, intakes, humidifying and ventilation devices.

Tests made on school ventilation system to determine its efficiency.*

Utilization of Heat for Power.—How is heat converted into mechanical power? Why are great losses inevitable?

How does the steam-engine work? Why does the expansion of the steam cool it?

What is meant by a double or triple expansion steam-engine? A single-acting or double-acting steam-engine?

How is a steam-turbine constructed and how does it work?

What happens in the piston-chamber of a gasoline engine? What is the difference between a 4-cycle and a 2-cycle gas-engine? Of which sort is an automobile engine?

In what order are the cylinders of a 4-cylinder automobile engine fired? 6-cylinder? 8-cylinder? 12-cylinder?

Why is a cooling system needed on a gas-engine? What advantage has an air-cooled motor over a water-cooled one? Which kind is used for aeroplanes?

References.—*Millikan and Gale*, pp. 185-195; *Black and Davis*, Chap. XII; *Hall*, Chap. XIX; *The Story of Great Inventions*, first part of Chap. III, pp. 150-172; *All About Engineering*, Chap. V; *Book of Wonders*, pp. 181-190; *How It Works*, Chaps. I-IV, inclusive; catalogs and circulars from automobile companies, and from companies supplying automobile accessories.

*See article in *Year Book*, Vol. IV, "School Heating and Ventilation—A Study in Applied Physics."

Magnetism.—Why is iron sometimes magnetic and sometimes not?

How are magnets made?

Why does a compass point north? Can the compass always be trusted?

What uses do we make of magnets?

Laboratory experiments on magnetism and magnetic fields.

Electricity.—What is electricity? How is lightning produced?

Thunder?

Why do thunder storms occur chiefly in summer?

Does a lightning-rod protect from lightning? How does it work? Why are lightning-rods not used in the city?

Study the action of the condenser and the electrophorus.

How is a battery made, and how does it produce an electric current?

What difficulties have to be overcome to make a good battery?

What are some common commercial types?

What are the merits of each type?

Laboratory experiments on the Voltaic cell, and methods of overcoming polarization and local action.

What makes the current flow in any electrical circuit?

How could you find out the direction in which the current flows in the trolley-wire on North Clark street?

How is electricity measured? Define the units.

What factors determine electrical resistance?

Laboratory experiment to determine these factors and effect of each.

How would you determine the resistance of an electric lamp? A coil of wire? A battery? The answers to this question are worked out by means of demonstration experiments.

What is a shunt? How does the current divide in a shunted circuit?

How does the electric current decompose water?

How would you silver-plate any metallic articles?

Demonstration experiments to show electrolysis in silver-plating.

How is an electrotype made?

How may a plate of pure copper be made from an impure one?

If two wires were connected to a source of electrical current, could you tell which one was positive and which negative? How would you find out?

How does the storage-battery work? What happens on charge? On discharge?

Laboratory experiment on the storage battery.

References.—*Millikan and Gale*, pp. 267-272; *Black and Davis*, pp. 348-355;

Electricity and Magnetism, pp. 522-528; *Mann and Twiss*, pp. 201-2; *Electricity*, Woodhull, Chap. V.

What makes an electric bell ring? How is the door of an apartment opened by electricity from each apartment in the building?

How is the strength of an electro-magnet measured?

Make a wiring plan to ring a bell by either of two push-buttons, one located at the front and one at the back door. Make a similar plan by which one button would ring two bells, one up stairs and the other down stairs.

How does the telegraph line work? Be able to make a diagram to show the connections in the path of the current.

A telegraph line is set up in the laboratory and used for some days by groups of pupils.

References.—*Millikan and Gale*, pp. 272-278; *Black and Davis*, pp. 271-279; *Mann and Twiss*, pp. 166-169; *Electricity and Magnetism*, Chap. XII; *How it Works*, Chap. VI; *Electricity*, Chaps. VI and XVIII.

How does an arc-light differ from an incandescent lamp?

Why are lamps in a house always connected in parallel?

What kind of electric lights are most efficient?

On what basis do you pay for electric light? Secure an old electric light bill, and find out what the terms on it mean.

How much does it cost to operate your vacuum cleaner? Your electric flat-iron?

Why is the consumption of electricity for heat the most expensive way to use it?

Make a plan for wiring a four-room flat.

Laboratory experiments on determining the efficiency of carbon and tungsten lamps, and the cost of operating them.

How does the dynamo generate an electric current?

What is the difference between a D. C. dynamo and an A. C. generator?

Why is the A. C. type used in all large installations?

How is a motor different from a dynamo?

Why does a motor require more current when starting than after it is running at a higher speed?

In the study of the dynamo, large diagrams are useful in tracing the currents and for the applying of the dynamo and motor rules.

How does the induction-coil produce a current of high electromotive force? For what purposes are such coils used? Why does the spark occur at the "break" instead of the "make?"

How is a transformer different from an induction-coil?

What is self-induction? Why is it an important factor in all A. C. circuits?

Why is power transmitted long distances only at very high voltage, and why is it always A. C. rather than D. C. current?

Laboratory experiments on induced currents, motor, induction-coil, and transformer.

What is the meaning of the terms *single phase* or *three phase* as applied to A. C. Currents?

How can storage batteries be charged, when the only source of supply is A. C. current?

How is conversation transmitted by telephone? What are the steps, connections, and circuits involved in making a call through a central station?

How is it possible to ring the telephone bell at a subscriber's although the circuit is open?

Sound.—How is sound produced and transmitted? Why does sound travel faster in water than in air? In hydrogen than in air?

What is an echo? Why are echoes noticeable only in large halls or out of doors? How may echoes be prevented in halls and auditoriums?

Sound-proof rooms are needed in the battle-ships of the navy. How would you construct such a room?

Why are sounding-boards used in connection with all stringed instruments? What causes sounds to differ in pitch? How may the pitch of a violin string be changed?

How does a bell, at a crossing, change in pitch as you pass it on a rapidly moving train?

What is resonance? Under what conditions is it produced?

Why does a large sea shell always seem to be giving off sounds of its own?

What is the difference between noise and music?

Why is the same note different when sounded on a flute, piano, or violin?

How does a bugler vary the pitch of the notes he produces?

How is a phonograph record made, and how is it reproduced?

Laboratory experiments on finding the velocity of sound, the pitch of a tuning-fork, resonance.

CHEMISTRY

The world war has emphasized as never before the essential part which chemistry plays not only in modern warfare, but in industry, agriculture, and commerce as well. While chemical knowledge and inventive genius has been concerned with the manufacture of high explosives, in the development of special steel for shells and cannon, in the production of deadly gases, and other means of accomplishing utter and complete destruction, it has been equally active in discovering agencies for combating the effects of these terrible substances and alleviating the suffering which they cause, in finding substitutes for needed commodities, and in developing new industries to supply articles, formerly imported.

The public is also coming to appreciate as never before the need of a wider dissemination and utilization of chemical knowledge if economic independence is to be ours in the keen competition which will follow the advent of peace. High-school chemistry teachers have a very real opportunity in the present situation to emphasize the need of more efficient use of our natural resources and of the production, adequate for all our needs, of dyes, potash, drugs, nitrates, and other chemicals of fundamental importance.

The increased application of chemistry to industry is likely to result in an increased interest in chemistry as a part of a complete education. High-school chemistry instruction, therefore, should not aim to develop trained chemists but to give to all students an intelligent understanding of the significance and importance of chemistry to our modern life which will serve as a basis of appreciation and future encouragement of chemical industry. This is the primary aim of the course in chemistry as taught in this school.

Chemistry teachers have been slow to adopt the project method of teaching, and only an extreme radical would affirm that this method is applicable without considerable modification of the course in chemistry. The objections which are commonly raised to teaching chemistry by projects or problems are as follows:

(a) Many problems and questions raised by pupils involve complex phases of chemistry, or ideas too advanced for their understanding. For example, the difficulty in getting proper dyes makes this a topic of considerable interest, but in the elementary chemistry course

it can be given only a very superficial treatment, and that well towards the end of the year. The manufacture of high explosives is another similar topic which involves technical matters of too great difficulty for the beginner.

(b) Many of the great principles of chemistry, because of the impossibility of direct or experimental proof, cannot be arrived at easily by the immature mind. They are philosophic concepts, which have to be accepted on the ground of their service to science and the useful conclusions which are based upon them; for example, the assumptions of the atomic hypothesis, or the rule of Avagadro.

(c) The array of principles and facts is so great that the student is almost helpless before them, and unless the basis for establishing relationships and controlling facts is first developed, there can be no appreciation of the scientific method and no proper organization of the information supplied by discussion, investigation, and experiment.

These reasons are not easily disregarded, yet some motive, some compelling inner desire is just as essential to educative effort in chemistry as in elementary science. How, then, can these opposing arguments be reconciled and a tentative basis for teaching chemistry be established? Does not the answer lie in the changing character of the pupil's interests and in the enlarged scope which his problems and projects may take on as a result of his growing abilities and his increased power to direct and focus them?

The test of a problem, its significance to the pupil, lies not in its concreteness or the useful application which it involves, nor the familiar associations which relate it to other problems, but in the degree to which the pupil makes it his own and identifies himself with it, because of his belief of its worth-whileness. Under skilful teaching, may not that question, which a year or even a few months earlier would have seemed abstruse and uninteresting, become a real, live, practical problem? In other words, does not the desire come to some pupils, and should it not come much more generally, to know what the constitution of things really is, what the atoms are, and what properties they possess; why the volumes of reacting gases have such simple relations to one another; or why the weights of equal volumes of gases show such striking regularities? The adolescent is easily aroused. He is not yet encased in a shell of limited and selfish interests. Ultimate causes and reactions appeal to him as perhaps at no other time of his life. If the chemistry teacher can kindle this inner spark of natural interest into the flame of real desire, then those matters which before

seemed dry as dust may take on a new and vital aspect and become as truly problems as any which have yet been found in the introductory science courses.

The laboratory work especially ought to deal with problems and questions which grow out of class and home study, problems having to do with the home, the farm, local industries, personal and civic welfare. Towards this end the titles of experiments can often be improved and made more suggestive by stating them in problem or question form. For example, instead of the title *Mordant Dyeing*, a better one is *Why are Mordants Used in Dyeing?* or, in place of *Equivalent Weight of Magnesium*, *How Much Magnesium is Needed to Produce a Gram of Hydrogen?* for *Analysis of Ammonia*, *What is the Most Economical Brand of Household Ammonia to Purchase?* The main idea of each experiment should be given definite statement at the outset. This may be stated as a purpose: *To Show the Method by Which the NaOH of Commerce is Prepared*, or as a question: *Does the Vinegar of Your Grocer Come up to the Legal Standard?* The mere statement *NaOH* or *Vinegar* at the top of the direction sheet is not suggestive and should be discouraged. There should be a logical sequence of experiments. That is, each experiment should not be all-sufficient to itself, but should grow out of the preceding work and at the same time have regard for the coming work.

The course in this school is given in the senior year with a time allotment of six periods per week, two of which are consecutive for laboratory work. Laboratory sections are limited to twelve each on account of the size of the laboratory. The same division into sections is maintained for one of the four remaining periods, so that it may be used for either laboratory or recitation purposes as required. It is based upon the following outline which shows the organization only upon broad lines and is followed by a number of type topics in order to illustrate to better advantage the method of teaching.

I. INTRODUCTORY STUDIES

(a) **CHEMICAL CHANGE.** Many illustrations and demonstration experiments to arouse initial interest; its chief characteristics as effecting matter and energy; its significance in a living and complex world.

(b) **OXIDATION.** A type of chemical change; its varied and more common applications; laboratory study of oxygen.

(c) **REDUCTION.** Relation to oxidation and its importance in the industrial world.

(d) **WATER.** Its importance in the economy of nature, physical and

chemical properties. Methods of decomposition, volumetric and gravimetric analysis and synthesis. Water as a solvent; effects of temperature change on solution. Methods of purification. Protecting Chicago's water supply. Excursion to local pumping-station. Laboratory testing of spring and mineral waters. Softening hard water. Industrial significance of this problem.

II. CHEMICAL LAWS AND HYPOTHESIS

(a) LAWS OF CONSERVATION OF MATTER, DEFINITE AND MULTIPLE PROPORTIONS. Equivalent or reacting weights.

(b) ATOMIC HYPOTHESIS. The fundamental assumptions justified as a basis for explaining a large variety of phenomena and observations, and as the keystone of chemistry.

(c) THE GAS LAWS. Taught for the purpose of measuring gases in the laboratory, as required for experimental purposes.

(d) THE LAW OF GAY-LUSSAC. Many illustrations from laboratory and demonstration experiments.

(e) THE RULE OF AVAGADRO. Derived from the previous study of gases. Determination of number of atoms in common gaseous molecules.

III. CHEMICAL ARITHMETIC

(a) SIGNIFICANCE OF THE FORMULA AND THE CALCULATIONS BASED UPON IT.

(b) CALCULATION OF MOLECULAR WEIGHTS OF GASES BASED ON EXPERIMENTAL DATA.

(c) EQUATIONS AND CALCULATIONS BASED UPON THEM. Great variety of problems, with emphasis on those of practical significance.

IV. ACIDS, BASES, AND SALTS

(a) LABORATORY STUDIES OF SODIUM AND POTASSIUM AS BASIC ELEMENTS FORMING HYDROXIDES.

(b) LABORATORY STUDY OF CHLORINE AS AN ACID ELEMENT FORMING HYDROCHLORIC ACID. Chlorine as a bleaching-agent. Chloride of lime; its use as a bleaching-agent and in the laundry.

(c) NEUTRALIZATION AND SALT FORMATION. Titration experiments of a practical sort, such as determining the acidity of vinegar.

V. CHEMICAL THEORIES

(a) SOLUTION AND ELECTROLYTIC DISSOCIATION.

(b) MASS ACTION AND CHEMICAL EQUILIBRIUM.

(c) PERIODIC LAW.

(d) ELECTROMOTIVE SERIES OF ELEMENTS.

VI. STUDY OF THE MORE COMMON ELEMENTS AND THEIR COMPOUNDS

(a) SULPHUR. Sulphur dioxide, sulphurous and sulphuric acids, hydrogen sulphide.

(b) **NITROGEN.** The atmosphere and its composition. The air in relation to health. The fixation of nitrogen. Ammonia and nitric acid. Explosives and war.

(c) **HALOGEN ELEMENTS.** Family relationships and distinctions emphasized.

(d) **CARBON.** Coal, water, and producer gas; excursion to gas plant. Graphite and carborundum. Petroleum and its products. Coke and by-products. Coal-tar and its derivatives. Conservation of these as a necessity to economic independence.

(e) **THE COMMON METALS.** Iron and steel; copper; aluminum; zinc; tin; and lead; many comparisons and contrasts in metallurgy, in physical and chemical properties; excursions to available plants.

VII. CHEMICAL INDUSTRIES

(a) **LIME AND PLASTER.** PLASTER OF PARIS.

(b) **GLASS AND PORCELAIN.**

(c) **CEMENT AND CERAMICS.**, Excursion to Cement-Mill.

(d) **PAINT AND PIGMENTS.**

(e) **PHOTOGRAPHY.**

(f) **BREWING AND ALCOHOL PRODUCTIONS.**

(g) **ELECTRO-CHEMICAL INDUSTRIES.**

VIII. CHEMISTRY IN THE HOME

(a) **CLEANING-AGENTS.** Soap and soap-powders; polishing compounds; ammonia and analysis of household ammonia water.

(b) **SPOT AND STAIN REMOVAL.**

(c) **DIRECT AND MORDANT DYEING.**

(d) **LEAVENING AGENTS.** Soda and baking-powder; laboratory testing of commercial brands. Yeast and vinegar. Excursion to yeast-plant and vinegar-works.

IX. RADIO ACTIVITY

(a) **THE RADIOACTIVE ELEMENTS AND THEIR PECULIAR PROPERTIES.**

(b) **THE NATURE OF MATTER** (as indicated by the discoveries in this field).

TYPE TOPICS MORE FULLY OUTLINED

OXIDATION

After the laboratory preparation and testing of oxygen, to determine its physical and chemical properties, the topics and questions for assignment and discussion include the following:

How was oxygen discovered? How abundant is it?

How is rusting and decay different from burning?

What is spontaneous combustion, and how may it be averted?

Why is perfect combustion necessary in furnaces and steam-power plants?

Why is imperfect combustion dangerous in stoves and grates?

Why is coal dust explosive?

Questions of this sort are usually found at the end of chapters in the ordinary textbooks, and serve chiefly for review or for making application of the ideas brought out in the chapter. By reversing the order, and suggesting them to the pupil before he begins his reading, his home-study may be rendered much more purposeful and effective.

The class discussion answers the above questions and serves to bring out many others of a similar character.

TESTING AND PURIFICATION OF WATER

The initial laboratory experiment answers the questions:

What are the common impurities in water?

How may they be identified and removed?

This work involves sedimentation; filtration; tests for sulphates, chlorides, calcium compounds and other dissolved minerals; distillation, including fractional distillation; and boiling to destroy bacteria.

In a class discussion following the experiment, the importance of an adequate supply of pure water to every city, town, and community is brought out, and the question raised as to which of the methods studied in the laboratory can be carried out on a commercial basis. The need of more efficient methods is apparent, and the assignment to the reference books is based upon the following questions:

Why does a laundry need soft water?

What is boiler scale?

How may roily river water be made clear and safe for drinking?

How is our own water-supply protected and purified?

At the next recitation these questions are answered, and many others which are raised by members of the class. Demonstration experiments of the coagulation method of water purification, and of the softening power of commercial preparations, such as Permutit, are included. Specimens of boiler scale, a section of an old boiler-tube, and an old teakettle, are shown to the class. Excursions to pumping-station and municipal water-laboratory follow.

Another worth-while laboratory experiment is to have the class test the hardness of many varieties of natural spring and mineral waters, supplying their own samples from springs, wells, artesian water, or commercial bottled varieties. The work takes the plan of a rough analysis, and includes a determination of the percent of total dissolved solids; the identification of the mineral salts present as far as possible; the determination of the degree of hardness, using a

standard solution of liquid soap; and a spectroscopic examination of the residue from evaporation of a sample.

TESTING FOOD PRODUCTS

This topic is introduced by asking the class how much of the food they eat is preserved? Copies of a few menus from the school lunch-room are shown, which make it clear to all that food preserved in some manner constitutes a large percent of that normally consumed. This suggests the following questions:

Are foods preserved in certain ways injurious?

How is the public protected from the improper use of preservatives, adulteration, and misbranding?

What are the preservatives likely to be found in various products?

How may they be identified?

The assignment covers these questions and copies of the *National Pure Food and Drug Acts* are placed on the reference shelf. The class discussion has as its outcome a conception of the complex machinery of national and state supervision of food products, and of the kind of problems with which a food chemist must deal.

Pupils are asked to provide themselves with samples of all sorts of food for the laboratory testing, which immediately follows this discussion. In order to secure a choice of samples worth testing, the laboratory direction sheet is given out in advance. It supplies directions for testing food-products for:

Sulphur dioxide or sulphites in dried and preserved fruits and meats.

Coal-tar dyes in candy, preserves and ices.

Flour or starch in candy and jellies.

Alum, copper, and tumeric in pickles.

Boric acid or borax in crackers or ice-cream cones.

Reference books for other tests are at hand to meet any particular problems that seem worth while in individual cases.

Following this laboratory work, the next recitation calls for a general summing up of results, so that the scope of the testing is apparent to all.

FIXATION OF NITROGEN

This topic is one of particular interest and affords exceptional opportunity to bring home to the pupil the wonderful achievements of chemistry in this field.

After the composition of the air has been studied and determined in the laboratory, these questions naturally arise:

Does the nitrogen of the air serve any useful purpose?

Can this vast quantity of nitrogen be turned into useful products?

What compounds of nitrogen are needed, and for what purposes?

With these questions as a basis, the class is given an assignment to the textbooks and reference material bringing out the importance of nitrogen compounds; of nitric acid for explosives, celluloid, and gun-cotton; of ammonia for munitions and refrigeration; of nitrates for soil fertility. The class discussion serves to emphasize the vital need of all these products and their manufacture in large quantities. In this discussion are included the following topics:

The nitrogen cycle, which is fully worked out and discussed.

The Birkland-Eynde and Haber processes for making nitric acid.

The Oswald process for making cyanamide and ammonia.

Coal as a source of ammonia. The wastefulness of the beehive oven is compared with the efficient utilization of the full value of coal in by-product ovens. The necessity for conserving the nitrogen compounds coming from coal is emphasized.

The final question under this topic is: What is being done in our own country to supply our needs for nitrogen compounds?

Newspaper clippings, magazine articles, etc., are of use in bringing this question right up to the minute and driving home its significance.

SOAP AND CONSERVATION OF FATS

The demand of the government for conservation of fats as a war measure makes an especial appeal to this topic at the present time.

Why are fats important in time of war? This question involves the recovery of glycerine as a by-product in soap-making and its conversion into nitro-glycerine and dynamite. Members of the chemistry class have a real opportunity to aid in this conservation movement, and to see to it that no fat is wasted in their homes, and that all not used for cooking is converted into soap. The production of a good soap, from any accumulation of waste fat, no matter how rancid, is a laboratory experiment of special merit. It brings home the practical usefulness of the chemical knowledge acquired not only to the pupil but to parents and friends as well.

This experiment can be done at home as well as or better than in the laboratory. In this way it tends to correct the rather prevalent notion that chemistry experiments are limited to the school laboratory.

It will usually be found profitable to have pupils obtain recipes for making soap from home and other sources, and work out the final laboratory direction sheet as the result of testing. Pupils can be of real service to the cause of conservation by spreading the propaganda of home-made soap as the best way to utilize waste fat.

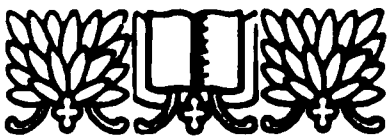
The following recipe, as a laboratory direction sheet, has been tested by a number of pupils and found to give good results.

MAKING SOAP FROM WASTE FAT

Materials: 6 lb. fat (accumulated drippings of any kind); $\frac{1}{2}$ lb. borax; 1 can Babbitt's lye (crude NaOH).

Dissolve the lye and the borax in 3 quarts of hot water, in an iron or enameled dish, and allow to cool. Melt the fat and strain through two layers of cheese-cloth, and allow to cool until pasty but not hard. Add the lye solution slowly to the fat, a little at a time, and with thorough stirring. After all is in, stir slowly for ten or fifteen minutes, until the soap thickens. If the soap does not thicken after fifteen minutes of stirring, give it an occasional stir until it does become pasty. Pour out into a pan lined with waxed or oil paper. When hard, cut into bars.

If a perfumed soap is desired, from 1 to 2 oz. of oil of lavender may be stirred in before pouring out. Coloring material may also be added at the same time. Instead of pouring into a pan, small pasteboard boxes, such as match-boxes, may be used as molds with good results.



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THE INDIVIDUAL AND THE CURRICULUM

EXPERIMENTS IN ADAPTATION



Published by the Faculty of the Francis W. Parker School, Chicago

VOLUME VI

PRICE, FORTY-FIVE CENTS

NOTE

With this issue the title, *Francis W. Parker School Year Book*, gives place to that of *Francis W. Parker School Studies in Education*. The sequence of volume numbers is retained, but in future reprints the former volumes will be given the new title.

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P R E F A C E

In the preface to the fifth volume we stated that we hoped to show, in the next number, how the World War influenced class room work and activities in our school. After the signing of the armistice, we found ourselves looking at the war-time influences in the school life with a critical eye, trying to select for publication only those which had some more than temporary meaning, some lasting value in education. This fresh centering of our interest has brought within the scope of the present volume certain war-time experiences, but also many other experiences illustrating the general idea of free adaptation of the curriculum to social and individual needs. Recognition of a principle as basic as this causes a school to reach out in its life to touch certain great emergencies and tendencies of society. On the other hand, it causes each teacher intensively to analyze his teaching, in order to make it a genuine and helpful experience for each child.

It is the object of education to train children in social living. It is the problem of schools to choose and present subject matter and to arrange a program which shall so train every child. Colonel Parker, in *Talks on Pedagogics*, discusses the selection of teaching material. "But knowledge is boundless, and your pupils can get but a drop of the ocean. What knowledge can you present them in the years you have them under your care and guidance? What rule shall govern you in the selection? The answer is not far to seek: your selections can be entirely governed by what each pupil needs for his personal development. He needs that knowledge which will enable him to best serve his school and the world. The two answers are one: The needs of the school and the needs of the world are the needs of the individual."

In speaking of the needs of the modern world, Dr. Dewey says that a democratic society "must have a type of education which gives individuals a personal interest in social relationships and control, and the habits of mind which secure social changes without introducing disorder."

The object of this volume is to suggest that the aims here defined can best be realized by having a schedule flexible enough to meet special and individual needs, and a curriculum adapted to the demands of each child's mind and spirit.

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INDIVIDUAL PROJECT METHOD

An Example of Its Operation in a Seventh Grade

At the outset let me distinguish between two types of more or less "free work," both in general parlance going under the title of "projects." One may be exemplified by a class or group under somebody's leadership deciding to make a scrap book illustrating by newspaper clippings the French aviator's proposed world flight. The other type may be illustrated by a boy saying to the teacher, "I have a toy wireless set at home; I'd like to bring it to school and set it up and study about it and show the class how it works—find out who invented it, and so on." We might consider the first example a "group project." It is, I should say, what we meant a few years ago when we talked of "motivated work." It contemplates the co-operation of several people, perhaps of a whole class. The initiating and carrying out demand a leader or director of importance, probably a teacher. Its virtue lies in the interest which the scheme arouses in the pupils and in the necessary amount of social co-operation. The second example is of a type of work much newer in the schools. It demands the working of one pupil, or possibly of a very small, self-chosen group. The workers are self-directed. It is of this second type of activity, "the individual project," that I wish to speak.

PURPOSES

A small number of teachers scattered over the country are experimenting with it. They all, doubtless, look to Dr. Kilpatrick of Teachers' College and to Dr. Colin Scott of the Boston Normal School as the developers and promulgators of the philosophy. For a philosophy it is—an idea that stimulates thought and action, not a method to be copied. Every one who falls under its spell sets about forming his own purposes and devising his own scheme of action. In an attempt through three years to act under the inspiration of the theory I have felt myself actuated by the following aims: to increase intensity of individual action; to preserve individual differences; to train the power of choice; to train the habits of self-direction and of self-stimulation; to train the power of self-judgment; to stimulate the habit of putting one's powers at the service of others.

Let me elaborate these aims a very little.

1. *To Increase Intensity of Individual Action.*—Is it not true that most people work for the greater part of the time at low speed and that there are always frequent lapses of effort when the mind wanders, and time is wasted? I should like to bring it about that my pupils work harder than they have ever worked before, that the times of concentrated effort be longer and more frequent than is usual, that the children have the conscious intention of applying themselves concentratedly and intensely.

2. *To Preserve Individual Differences.*—There were thirty-three people in the class described, with different homes, different parents, different inheritances. They had various characters, interests, and abilities. I should have liked to preserve the interesting and valuable among these differences. I should have liked to have these children remain, not thirty-three copies of one person, but a variety of persons; for a world of diversity is a more interesting, more powerful, more effective world than one in which we might all be alike. If we want originality in the future, we cannot get it by training in conformity during the twelve most impressionable years.

3. *To Train the Power of Choice.* Is it not true that only in so far as we are able individually to make more or less independent personal choice are we useful to the world? People who always wait to follow a leader, always wait for suggestion, are a clog on the wheels. Again, if what we want in the people of the future is the power of choosing, we teachers must not through twelve years be making the choices.

4. *To Train the Habits of Self-Direction and of Self-Stimulation.* In business and industry that man is a nuisance who, after he has been given a job to do, is always referring to his superior for directions as to how to do it and where to find the material, and for decision as to whether he is right as far as he has gone. He soon has to give place to a man who can take up a job, make suggestions, improve the working conditions, and then relieve his superior of the work, even if it takes time. Are we training our children to be such men?

5. *To Train the Power of Self-Criticism.* We ought to learn to judge our own work as we go along. We ought to be able to say, "I have done this, and I am satisfied to fight better." We ought to be able to judge the success of our own work as we go along. We ought to be able to say, "I have done this, and I am satisfied to fight better."

any confidence in our own judgment of anything, our own tastes, our own efforts least of all. Therefore we accept the loudest opinion of neighbors or platform or press. Why? Does the answer lie in the fact that for eight or twelve or sixteen years we have been trying to live according to someone else's judgment and have been seeking to gain the symbol of his favorable opinion?

6. *To Stimulate the Habit of Putting One's Power at the Service of Others.*—Of late the educational world has been talking much of the "socialized recitation." This means, does it not, that we believe the chief purpose of education to be the making of individuals who will be useful group members, whose ideal is one of co-operation, of service? Is there a possibility that such socializing is only putting a camouflage roof over a very unsocial house, that a school organized on the basis of group recitations concerning academic subject-matter is an autocratic, unsocial organization? Is it only as people associate themselves into continuing or dissolving groups, directing themselves in the working out of their own purposes, themselves meeting the difficult problems of the varied temperaments and powers and faults of the members of the group, that they are in a really social atmosphere?

CONDITIONS

The attempt I am to describe was made in a small room, holding thirty-three children of a seventh grade. Our working day was from 8:50 to 3:30 with a half-hour every day for a general school morning exercise, and an hour at noon for luncheon and play. A few subjects were taught by special teachers at set times. These were music, gymnastics, mathematics, and modern language, all occurring in the afternoons. Let me confess that I had not the courage to leap into the water without a good old life preserver that I knew I could trust. So I kept a teacher-directed course in history running through the year. Of all these directed classes I say nothing, nor do I describe some additional important class projects—making desks for our whole class, hand-lettering and illuminating a quotation for our gift to the seniors, a study of naturalization in the United States, a study of the world crop. It was possible for the children to use the library, the clay shop, the manual training room, the science laboratory. We had for our own use as a general work shop what was originally built as a play house in our back yard. Now and then it was possible, in spite of crowded programs, to get the help of other teachers in case of special need. Most of the

time every day was unallotted, to be arranged as seemed best from day to day. Each evening I made the program for the following day, remembering what things were on the docket and making the necessary arrangements. Sample programs may be useful.

8:50—Announcements and report on home work

9:00—*Report on gasoline motors

Spelling test and dictionary drill

*Report on farm implements

10:15—Individual study

11:00—Morning exercise

11:30—Outdoor play

12:00—Luncheon

12:25—Workers of the Middle Ages (history recitation)

Special group for those needing drill in writing

1:00—French and German

1:35 Reading of *Long Will* (by teacher)

2:10—Government of Turkey (by another teacher in answer to questions previously asked by children)

2:50—Printers work on desks

Others, home

8:50—Announcements and report on home work

9:00—Factory system (history recitation)

*Mirrors and angles. (Recitation following previous report)

*10:00—Individual study

11:00—Morning exercise

11:30—Outdoor play

12:00—Luncheon

*12:25—Report on battleships

1:00—Arithmetic

1:35 Reading of *Long Will*

*2:10—Handwork

8:50—Announcements and report on home work

*9:00—Report on armor

Great men (history recitation)

*10:00—Individual study

11:00 Morning exercise

11:30—Outdoor play

12:00—Luncheon

*12:25—Correcting of written account of report made for record book

1:00—Arithmetic

*1:35—Criticism of covers for record book (by art teacher at our request)

2:10—Group 1, printing

Group 2, hand-lettering

*Connected with individual projects.

Each morning such a program was read to the class and posted their consultation. It may be observed that only one hour is more or less sacred and unchangeable, and that is the ten o'clock period for individual study. In order to make clear what is meant by individual study, I show a list of the class with the subjects upon which each was working for that hour on a certain day.

SUBJECT—INDIVIDUAL STUDY

Paper making
 Wireless
 Typing
 Historical pageant
 Paper making
 Paper making
 Absent
 Mirrors
 Weapons
 History of art
 Forestry
 Wireless
 History of sailing ships
 Paper making
 Mimeographing
 Wireless
 Writing a play for his puppet theater
 Absent
 Stars
 Historical pageant
 Absent
 Early maps
 Absent
 Making hectograph
 Armor
 Photography
 Armor
 Writing a play for the puppet theater
 Railroads
 Mimeoscoping drawings of airplanes
 Tanning
 Rocks
 Wireless

To quote a little description of this period, written by one of children:

*In all lists names of girls are starred.

"We are everywhere at once—some in the shop making a theater, some in the library poring over books, some in the laboratory making experiments, some in the art room printing, and still others in the class room doing almost everything."

The following list will give an idea of the types of handwork chosen. The whole class was studying printing, but on account of the large size of the group and the small size of the print shop, only a third of the class could work there during a quarter. At the time the group of eleven was in the print shop, the others were engaged on their individual projects.

SUBJECT—INDIVIDUAL HANDWORK

- *B. Dressing historical doll
- B. Box of electrical apparatus
- *B. Clay modeling
- C. Clay book ends
- *D. Dressing historical doll
- *E. Printing
- F. Making airplane
- F. Printing
- F. Printing
- *H. Printing
- J. Absent
- J. Drawings for wireless
- *J. Mechanical drawing
- *J. Dressing historical doll
- *J. Printing
- J. Printing
- J. Making puppet theater
- *J. Absent
- *K. Printing
- *L. Making mimeograph
- *L. Printing
- L. Printing
- *M. Absent
- *M. Making mimeograph
- M. Printing
- P. Putting up telegraph line
- *P. Printing
- R. Making puppet theater
- T. Making puppet theater
- W. Absent
- W. Putting up telegraph line
- W. Printing
- W. Drawings for wireless

A word of explanation as to the appearance of both handwork and individual study. In my first attempt, a year earlier and in another school, to teach according to the project method, I felt distressed by the fact that practically all the projects were manual ones. At first I hoped that the installing of an aquarium, the making of a model sawmill, the drawing of different types of arches, would lead out into intellectual activities, would send children to books for further information, would drive them to written composition for the sake of record or report, would send them on excursions or investigation. But that kind of thing happened very rarely. F. was satisfied to install the aquarium and care for the fish. A. printed her calendar and had no desire to learn about the history of printing. At the beginning of last year, therefore, I had a little talk with the class, in which I pointed out the two kinds of work that people need to do, and we agreed to have two periods in the day for individual projects, one to be reserved for those activities demanding chiefly use of the hands, the other for those needing especially intellectual exercise. This little device seemed to solve the problem, for most children really do care about getting the experiences they think they ought to have. It is surely right for children of this age to begin to be conscious of their mental processes and their mental needs.

A few examples may show the kinds of projects that the children pursued and the manner of working. Two girls, L. and M., came to me one day and said they thought they would like to make a mimeograph for themselves like the one in the room. I said, "Very well, you had better make a drawing." This they did, and they went to work by themselves in the outdoor shop during the handwork period. After a few days they wanted to know what kind of a report they could make. I said, "Oh, are you going to make a report?" for I had not thought of this handwork going over into anything more intellectual. "Oh, yes," said they. They thought they might give a play showing how to use a mimeograph. I approved, and after a few days they presented three plays that they had written and wanted me to choose the one that I thought the best. I read them, wrote my criticisms, and returned them. A day or two later I found that they were not only studying mimeographs, but investigating other duplicating devices. They used for reference "The World Book," and one of them visited her father's office. Besides, they were using the typewriter and mimeograph in

the room and in the school office. After a week's absence of my own I returned to the school to find that M. was making a hectograph. She had found the recipe in "The World Book," had gone to the store and bought glycerin, had brought gelatine from home, and had made a hectograph. When the group gave their report she successfully duplicated copies of the program as souvenirs.

M. decided he wanted to study about armor. He made a book of ten drawings, illustrating armor from the time of the Greeks to the Middle Ages, with rather full notes, calling attention to the changes and to points that the ordinary observer might miss. The matter of getting these notes into good form was a difficult and serious one for a boy who has much trouble with spelling.

Three boys decided they wanted to make a toy theater. They began without having planned it very definitely. The scrap lumber which was given them was perhaps discouraging, or at least uninspiring. After they had worked for several days in the outdoor shop, I went out to inspect. The theater was a sad looking affair. There was not a straight line in it, there were no square corners, the nails were too long and had been turned over, everything was askew, and every piece was covered with "rose buds." I told them very frankly what I thought. They said, "Well, it isn't looking very well. It's hard to drive the nails." I asked them whether they would like better wood. I suggested screws instead of nails and reminded them of what they had learned about try-squares and counter-sinks in making tables. They applied to the manual training teacher for better wood and began all over again. Pretty soon, while I was out of school, I received a letter from J. saying, "We have got the theater almost done--not a nail in it!" I do not think that that was a waste of wood. The second theater I consider a creditable piece of work, and the boys aver that they learned much in making it. Whatever they learned came by experience, and that sort of knowledge is doubly valuable.

The story of the completion and dedication of the theater is of some interest. On a certain Friday we were to give a party for the seniors. The theater group and the rest of the class felt that a puppet show would add to the joy of the occasion, but the theater was far from done, the puppets were not made, the scenery was unpainted, and the play was unlearned. "If you would let us work all day Thursday and Friday, I know we could finish it," said one of the boys. The request was granted. The group worked like

beavers, and the play was presented. It was not a great success, and the boys found that the presentation of a puppet show involves more problems than they had dreamed of. Four other plays, however, were given after more preparation, and one of the group decided that his vocation in life was to be that of a playwright.

The theater, moreover, was used for the presentation of a play by another group, and stimulated two other children to make a similar building. For J. and J., both girls of considerable manual skill and executive power, told me one day that they were making a toy theater at home and that the puppets were to be operated by magnets. One day, two weeks later, after school, they ruefully said that they were rather discouraged about their theater. "It looks like a box." The next day they brought it to school and showed it to me. After a little discussion, they became fired with the idea of making a wooden front in the shape of a Greek temple. They drew sketches and made measurements and went down to the manual training shop for wood to take home. It was only a few days before the theater came back, looking very interesting, with little clay decorations, a pretty blue-and-white curtain, and a painted scene all complete. In the meantime the girls had written a play based on *Horatius at the Bridge*. The only things left to do in school were to paint the woodwork white, make the puppets—without the unruly magnets, alas!—and learn the parts.

Two or three times, when given opportunity to choose his own homework, R. K. reported "Tanks," and I made inquiries as to how he was getting his information and what he was going to do with it. "Oh, I read about them in the *Scientific American* and I am clipping pictures of them from the newspapers. I want to make a report to the class." After a few more days he brought me a paper which he had planned as a climax to his report. It was called "A Surprise on the Germans." Soon he brought all his pictures and asked for a large card to paste them on. The result was a pictorial chart illustrating the different kinds of tanks.

The type of project demanding only reading for its working out may be illustrated by J.'s study of Egypt. She expressed herself as wanting to learn about different religions. As to the mainspring of the choice, I am not certain—possibly it was our slight study of the origin of Christianity. The first material I could find was Maspéro's *Ancient Egypt and Assyria*. The great detail and the wealth of picture in the Egyptian chapters fascinated her and modi-

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fied her purpose into that of studying the religion and life of ancient Egypt. It happened that a high school class in ancient history had already accumulated for the school a large number of Egyptian wall paintings. These she studied and with them illustrated a report so full of definite detail, well classified and centered, that she held the class intensely interested.

A boy whose uncle owned a tannery wanted to know about the tanning processes and wanted to instruct the class about them. He found accounts in two or three books, read them, and then took an afternoon to visit the tannery. He brought back a piece of raw hide, pieces of leather that had undergone different processes, and a specimen of the tanning compound. He rigged up a box to represent a drying room, cut a piece of leather into the shape of a hide and tacked it to a board, and in his report used all these materials for illustration. The most gratifying thing was his search for first hand knowledge.

REPORTS

It was our invariable custom, inaugurated with a bare suggestion and no pressure, that as soon as a child considered that his project had been carried as far as he could carry it, he should report his work to the class. After the first few reports proved successful and interesting, every child seemed to hold as a second purpose in study the preparation of a good report. We had some discussion now and then as to what constituted a good one. It was the unanimous opinion that "just talk" was not enough; that there must be drawings, models, demonstration; that it was better not to read the report; that everybody ought to be given a chance to ask questions; that it was better to make the class do some work if possible. The result was that as children worked they were planning how to make their reports successful, were taking notes for their talks, were making large drawings to show the class, were planning questions that they could ask, were trying to devise interesting and vivid ways of presenting their facts. One began his report with the question, "Do you know what rocks are?," another with, "Do you suppose that people have always been able to make maps like those we have today?" The day before two girls were to give their report on China, they said to me, "Please ask the children to ask questions about China that they would like to have us answer tomorrow."

The length of the reports varied greatly, according to the sub-

ject and to the thoroughness of the student reporting. They occupied all the way from one half-hour period to five such periods scattered over five days. A half-hour seemed to be the norm in time for good listening, though one boy held his audience through an hour of talk and demonstration. A verbatim stenographic record of the report of two girls who had studied Japan will illustrate the quality of the best of the reports. It shows, too, the amount of participation of the audience and the degree of relevancy and value in its additions and questions. When the class heard this record, be it said, they were surprised and disappointed. "It was one of the best reports of the year," several said, "and this makes it sound silly." "Those sentences sounded all right when they talked them, but when you read them they are ugly." The group had on display a goodly number of Japanese prints belonging to the school, and of little objects of wood and bronze and ivory brought from home. The person talking was constantly turning to the screen where the picture hung, or picking up some object from the table. In the following account, the introductory and closing paragraphs were not spoken at the time of the report, but were written by one of the group when she edited the stenographic report for use in the record book.

JAPANESE ART

Seventh Grade

April 25, 1919.

(Stenographic Report, edited)

Oriental and quaint is Japan, artistic in its own art as every other country; not only in painting and sketching but in music, too, for when you see the dark-eyed Geisha girls come bashfully along with their "Samisens," playing low and monotonous tones all the while, you realize Japan is quaint and oriental in everything.

Miss Hall.—Beatrice and Dorothy have been studying Japanese art—one of the last things they have studied in connection with Japan. They are going to report on Japan sometime, but they have chosen to report on the art.

Beatrice.—We are going to tell you about Japanese art. The first Japanese prints were done in black and white, and this was done for a great many years. The first colors they used were rose and green. We have a print here, which is the nearest we could get to the first prints that were made, and it shows a little green. This is a very old print. Then they added black and then yellow and then blue and then the rest of the colors. In 1900 they began printing one color over another. They did this with blocks. Dorothy will tell you about the blocks later.

William.—I know that in Japan they do have roosters with long tails just like that one in the picture. I saw a picture and they said it was a picture of the rooster that took the prize for the longest tail. It had grown very long. It was more than a yard long. They feed the roosters and do everything to make the tail grow, until maybe it stops growing, and then they bring it to a show, and if they cannot make it grow any longer, they throw it away and try another.

Question.—I wonder if they think our drawings are beautiful?

Beatrice.—No, they do not like them at all.

Miss Hall.—Do you mean to say the rooster is not well drawn?

Beatrice.—I mean the drawing is different from ours. The Japanese never do anything real—they try to make it fancy—according to their imagination.

Miss Hall.—Once in a while lately when you have been lettering and have been trying to think of a design, I would say, "Conventionalize some flower." I would try to explain by saying, "Don't try to make it realistic; do something to change it, to make it fit what you want it to." Is that what you mean?

Beatrice.—Yes. The Japanese want to conventionalize all things; they draw to suit their fancy.

Fredrick.—Are the Japanese words divided up into letters, or is it learned like shorthand, and then different signs for different words like ours?

Beatrice.—Yes, each one of these is a word. Sometimes a symbol stands for a syllable instead of a word.

Someone.—I saw an American who lived in Japan and he told us that lots of signs that you think are letters are just syllables divided up and put on top of each other so that they look like one letter.

Beatrice.—That is true.

Question.—Do the Chinese read from the back of the book, like the Japanese?

Beatrice.—Yes. They are like the Japanese. Here is another Japanese book. This gives you an idea of their imagination. It is a book of wave designs. They are very beautiful, but they are not true to the waves. (*Turning over the leaves.*) All these are supposed to be wave designs.

Comment.—They look more like clouds.

Beatrice.—This one is more real, and this one shows the foam on the waves. But you see, they could not possibly be true.

John.—What is the idea of drawing things that have no meaning in them?

Beatrice.—They think them beautiful.

Miss Hall.—I think John will get his answer without anybody's saying anything, next month when he begins to plan the imaginative portion of his card. It is a matter of making a space beautiful. If you decide that a flower does not fill a space, you adapt it. Have any of you in this grade had experience in doing just this thing?

Laura.—That thing we were making this morning.

Charles.—There are some people in the lower grades that make that kind of thing, and they use some kind of oil that they put on cardboard or wrapping paper, and it makes it tough, and then they draw the design in pencil and cut it out with a knife. They are making things in the little extra room for the third grade. Their viking ships are stenciled that way.

Miss Hall.—How many have seen those viking ships? (*Most have seen them.*) What kind of special oil do they use in making these stencils? Who knows?

Answer.—Linseed oil—the kind they get out of cotton.

Miss Hall.—No, it is made from flax seed.

Beatrice.—We are doing these in black, but the Japanese color them. And this little brush is what they write with. We will show you some Japanese writing in just a minute.

Comment.—I have heard that the Japanese make pictures of different colored sands.

Beatrice.—Yes, they do use different colored sands and they make pictures with them.

Question.—In the sand?

Beatrice.—No, they let the sand run down the paper from their hand.

Question.—How do they make it stick on?

Beatrice.—They have the paper on which they let the sand run on a level table or the floor. See, this design is finished. (*She has taken off the stencil.*) It is supposed to be wisteria. This is a little bird, but it did not turn out very well.

Ward.—When Beatrice spoke of the different colored sands, it reminded me of the Pacific Exposition in California. In one of the big windows different grains were placed in such forms that they took the shape of pictures, and the work was done by a Japanese.

Beatrice.—This is the way they write. I did this myself—I copied it from a book. I think the Chinese is much the same. This means “Happy New Year” in printing, and this is “Happy New Year” in script.

Question.—What do you mean by “script?”

Beatrice.—Script is your handwriting and printing is like the printing of newspapers or books.

Beatrice.—The Japanese prints are much different from what they were years ago. You will notice these modern ones are in all colors. These two are old ones.

I am going to show you a Japanese book. Instead of beginning at the front as our books do, the Japanese book opens from the back. (*Turning the leaves showing colored prints.*) Here is one that is very modern. Here is another. This is beautiful, but more modern. This picture shows the way Japanese draw roosters. It is not at all like ours. It looks more like a pheasant than a rooster.

My father says that in Japan the pheasants are used like our chickens. The people carry them along, dragging their beautiful plumage in the dirt. They don't count them for anything, but they think it is perfectly horrible for us to kill chickens.

William.—I know that in Japan they do have roosters with long tails just like that one in the picture. I saw a picture and they said it was a picture of the rooster that took the prize for the longest tail. It had grown very long. It was more than a yard long. They feed the roosters and do everything to make the tail grow, until maybe it stops growing, and then they bring it to a show, and if they cannot make it grow any longer, they throw it away and try another.

Question.—I wonder if they think our drawings are beautiful?

Beatrice.—No, they do not like them at all.

Miss Hall.—Do you mean to say the rooster is not well drawn?

Beatrice.—I mean the drawing is different from ours. The Japanese never do anything real—they try to make it fancy—according to their imagination.

Miss Hall.—Once in a while lately when you have been lettering and have been trying to think of a design, I would say, "Conventionalize some flower." I would try to explain by saying, "Don't try to make it realistic; do something to change it, to make it fit what you want it to." Is that what you mean?

Beatrice.—Yes. The Japanese want to conventionalize all things; they draw to suit their fancy.

Fredrick.—Are the Japanese words divided up into letters, or is it learned like shorthand, and then different signs for different words like ours?

Beatrice.—Yes, each one of these is a word. Sometimes a symbol stands for a syllable instead of a word.

Someone.—I saw an American who lived in Japan and he told us that lots of signs that you think are letters are just syllables divided up and put on top of each other so that they look like one letter.

Beatrice.—That is true.

Question.—Do the Chinese read from the back of the book, like the Japanese?

Beatrice.—Yes. They are like the Japanese. Here is another Japanese book. This gives you an idea of their imagination. It is a book of wave designs. They are very beautiful, but they are not true to the waves. (*Turning over the leaves.*) All these are supposed to be wave designs.

Comment.—They look more like clouds.

Beatrice.—This one is more real, and this one shows the foam on the waves. But you see, they could not possibly be true.

John.—What is the idea of drawing things that have no meaning in them?

Beatrice.—They think them beautiful.

Miss Hall.—I think John will get his answer without anybody's saying anything, next month when he begins to plan the imaginative portion of his card. It is a matter of making a space beautiful. If you decide that a flower does not fill a space, you adapt it. Have any of you in this grade had experience in doing just this thing?

Laura.—That thing we were making this morning.

Beatrice.—Yes. Jessica made a cross in her stained glass window. It is still up there. But you can see it is more imaginative than a real cross. And it is much more beautiful. (*Still holding open the book of designs.*) Do you see this design here? It looks more like a fan than anything I can think of, but it is supposed to be a wave. It is drawn on a fan.

Here are some more Japanese prints. This one is very old. We are going to have these hanging around the room so that you may see them afterwards.

John.—I thought you said they didn't have any colors. These are in color.

Beatrice.—These were made after the Japanese began to use colors. The Japanese have a different perspective from our artists. They show the perspective by color. In this print the background is drawn in gray to make it look far away. If we want to make an object look far away, we show it in the lines.

Miss Hall.—Does anyone know what "perspective" means?

John.—We had it last year with Miss Claussenius.

Beatrice.—You probably remember last year, when Miss Claussenius showed us when we tried to draw those pictures of trees. We drew a picture of a railroad straight up and down, but drew the lines closer together at the top, and it looked far away. But the Japanese print is often colored to look far away. You see it in these pictures.

Question.—What are those little marks on the side of the picture?

Beatrice.—Those are the names of the artists. Now, in this old picture, the name of the artist is away down here, and in this one it is up there. The artist uses his name as a balance, as a part of the picture. The American artists write their names in the corner. On this print, this is the name of the picture, and this the name of the artist, balancing it on the other side. This one shows you that the Japanese don't like to make things true. A tree does not grow like that.

This one has faces of the Japanese—the artists make their faces nearly all alike—not like real people.

Miss Hall.—We need to remember that Japanese faces are not like ours.

Beatrice.—This one is much like the others. You will notice their faces. Here is a box, hand-made. Miss Hall thinks the wood is set in.

Miss Hall.—The Japanese have a way of shaving wood as thin as paper. They have very great skill in this. The top of this box is made of natural woods of different colors, and they are glued on top in the form of pictures.

Dorothy.—Here are some hand-carved chop-sticks. And here is another set with little things at the end so that you can hang them to your belt. The black ones are of ebony. I do not know what kind of wood the others are made of.

And so, having passed through the eight beauties of Omi, the prints, the sketches, the stencils, the designs, and the arts of Japan, and having realized them, we awoke with the buzzer to find ourselves not in Nippon, The Land of the Rising Sun, but in our own seats.

I have a few unanswered questions concerning these reports. One was put by a visitor. "Do they want to hear the reports?" he asked. Early in the year I had asked myself the same question, when a class often made a restless audience, so one day I said, "We have two reports ready today. Let's have them at the same time. You may choose what one you will hear." There was vigorous objection. Several people said, "I want to hear both." Some of those who were to report complained, "Then we can't hear W.'s 'Battleships!' "

Later in the year, however, no protests were made at such a division. In an attempt to get a true light on the matter of the interest in the reports, I asked the children to write on the following question:

"How do you feel about the interest and value of reports?"

With one exception all considered the reports very valuable. I quote a few interesting expressions of opinion.

"I have a chance to see and understand what some of the other members of our class are studying about and how they study their reports."

*B.

"I think from the reports I get a larger circle of knowledge in a shorter time than otherwise."

C.

"I get much information out of reports, and when I gave one it made me recall all I had studied."

R.

"I feel that reports are essential. I think reports teach all concerned."

L.

"I think that most of the reports were interesting to the class, because I think that most children of our age are interested chiefly in the same kind of subjects."

F.

"I think that some of the reports were not interesting to me, but were to the boys."

*M.

"I think there's a lot of value in reports if the report is given well, but I think that some of the reports have been sort of dull. One thing that makes a report dull is to read it and not have any pictures, drawings, or models. I think that one thing that helped the 'Battleship' report was the drawings, and I think that one thing that helped my report was the model of the real airplane."

F.

"I think they are probably the most valuable things we have had, for they have been on so many different subjects. Some of them I never thought about, but they are interesting just the same. And others I have wondered about but hadn't had time yet to study and perhaps never would have gotten time for all."

*M.

"I think the majority of reports are very good and that we get a great

deal from them, especially if we have them in written form in our note books, but on some reports I don't think the papers do justice to the report, while in others they are told better than the report." F.

"Although a person may not be interested in a certain subject, if the subject is cleverly and interestingly given it is worth listening to to get ideas from. Most of the reports given this year have been good for two principal reasons. First the material has been good, and second they have been well told." *H.

There is always a question in my mind as to how effective these reports are for the rest of the class; for one always feels that the good is to the reporter and not to the hearer. A few times I gave short tests seven or eight days after the reports were made, but with varying results.

On these pieces of conflicting evidence, I have not been able to arrive at conclusions. Did the children enjoy the reports? Did they get sufficient profit from them? Did the listening to them and the attempt to write accounts of them encourage superficial thinking? On the other hand, was the giving of the report so valuable as a stimulus to those giving it that we may be willing to risk its disadvantages? Did the listening to the variety of subjects presented do so much for the class in beginning new interests and in arousing appreciation of one another's powers that the good counter-balanced possible ill effects? During this year I must gather evidence on these questions.

After a very few reports had been given, I made the suggestion that we should keep a book of written accounts. This proved to be a very successful institution. At the end of the year it was a rather complete and illustrated curriculum of the seventh grade of 1919. Very rarely was the writing of these papers anything but voluntary. I usually offered the alternative of writing So-and-so's report or of doing something else. I give three accounts as examples. They are made up of the best parts of papers written by children who got their facts almost entirely from the report. In these cases I did the choosing and editing. At other times a committee of children did it, and such editing seems to me very good training in criticism.

HISTORY OF ART

Beauty and knowledge are the things worth while having. Another name for beauty is art. Art is truly a wonderful thing, not a thing of one country, but each and every country has its own original art. Egypt, the mother of all arts, Greece and Rome with their wonderful sculpturing.

how wonderful it really is, but if it were to be shut away and all the world was involved in darkness, then only should we realize its strength. On Friday Frederick brought us to realize it a little better when he gave us a report on lenses, a very important branch of science. This report was given by a great many demonstrations and drawings. He had not only glass lenses but lenses from eyes. He had a camera, a pin hole camera and a camera obscura. He also explained that reflection means when light strikes an object it is thrown back and that refraction means that the light is bent.

It was a dreary, dingy shop with only one window, in which stood a vase half filled with water. Sitting before this was an old man with a tablet and pen. While thinking for the next verse he glanced through the window and saw to his amazement the building on the other side of the street enlarged and magnified. Why? He had been looking through the vase and water. He immediately told his friends, and they made other experiments, such as hollowing out two pieces of glass and filling them with water and then closing them. Thus was made the first water lens. There are many kinds of lenses. Some magnify, some diminish the object, while others do not do either so strongly.

There are two kinds of cameras, one is called the pin hole camera, the other is called the lens camera. The pin hole camera is nothing more than an oblong box with a covered pin hole at one end and a sensitive plate at the other end. When a picture is taken the pin hole is pointed away from the sun on the object. When the cover is taken off the pin hole, the sun shining on the object reflects in different shades off the object and the rays going straight to the pin hole go through and are printed on the sensitive plate. The pin hole is then covered again so the light does not spoil the sensitive plate. Later the sensitive plate is taken out in a dark room and is used to print the pictures on paper.

The pictures taken with a pin hole camera are not as clear as those taken with a lens because they have no lens in them by which they could clarify the rays coming from the object.

The lens camera can also be a box with a sensitive plate in the back but the front part of the box is supplied with a finder, an automatic shutter, and a lens. The finder is up in the corner of the camera, and you look into it from the top and see the object the camera is pointing at. The image of the object goes through the lens to the mirror upside down because in going through the lens it is turned upside down. Then the mirror throws it up to your eye right side up. The shutter takes the place of the cover in the pin-hole camera and can be set to stay open for a certain length of time and then to close.

The lens's action on the rays which enter the camera is to clarify them. The rays from the top part of the object, striking the lens at the top, are refracted toward the middle of the lens and are so thrown on the bottom part of the plate, and the rays from the top part of the object, striking the middle of the lens, have no middle to be refracted toward, and go straight on and so strike the bottom of the plate also. This makes it clearer than

temple. Just before the door there was a strange looking flat arch, called a pylon. In the temple at the farthest end was the cella where the jewel-hung god was kept. Inside the temple there was row upon row of columns supporting the roof. This was not only for strength but for beauty also. The largest temple in Egypt is the temple of Ammon at Karnak. This is really a vast forest of wonderful columns. These columns are all carved and painted. Its twelve central columns are sixty feet high and twelve feet in diameter.

Let us leave Egypt to go to a more known and beautiful art, the Greek art. This is very beautiful because it is so natural. In Egyptian drawings there is a side view of the feet, front view of the shoulders, and side of the head. They did this because it was easier to draw. The faces they made were conventionalized. Although you could not pick out what is wrong, it can plainly be seen that the face is stony and expressionless. But the Greeks knew how to make the human face look human and alive. They did not make the face and arms of their statues look dead and stiff and cold, they made them look alive and easy and warm.

There were many, many statues of men and women, and gods, and very beautiful, too. One of the seven wonders of the world was a statue of Zeus. It was made of gold and ivory and had a wreath of green gold around its head. It stood once in Olympia, but we have it no more. Another very famous statue is the Hermes of Praxiteles. It got its name from Praxiteles, its sculptor. Hermes is standing erect, and in one arm he holds the baby god of mirth and wine, Dionysos. The history of Venus de Milo is of interest. On Melos, a little island near Greece, lived a farmer. One day when he was walking he saw a cave and went into it. Inside he saw an ancient statue of a goddess. Both arms were broken off and one foot, but all the rest was perfect. He then took the statue home and sold it to a Frenchman. Then it was given to a king and put into the Louvre in Paris. Another of the wonderful works of art is the Winged Victory. Once a Frenchman went to Samothrace. He was digging and found two hundred pieces of marble. He sent them to Paris, where they were put together and found to be the Winged Victory. They found that Victory was standing on the prow of a ship. The reason that the statue is noted among the wonderful master-pieces is that the gown is draped so gracefully on the statue and the wings are placed so gracefully.

There is another lovely thing about Greece. That is the wonderful columns. There are three parts to these columns, the base, the shaft, and the capital. The capital is decorated beautifully, but on some columns it is just plain. The shaft has grooves in it all the way down. They call these grooves flutes. Columns are all designed in the most beautiful fashions though somewhat alike. Let us close here with a picture of the Parthenon, and around it altars and beautiful statues.

*B., *H., *K., *E., and *D.

LENSES

Light! What a wonderful thing it is! The rising of the sun in the great east brings light, and the setting brings darkness. We do not know

how wonderful it really is, but if it were to be shut away and all the world was involved in darkness, then only should we realize its strength. On Friday Frederick brought us to realize it a little better when he gave us a report on lenses, a very important branch of science. This report was given by a great many demonstrations and drawings. He had not only glass lenses but lenses from eyes. He had a camera, a pin hole camera and a camera obscura. He also explained that reflection means when light strikes an object it is thrown back and that refraction means that the light is bent.

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if only one ray struck the plate. But the plate has to be where these two rays cross or there will not be a clear picture.

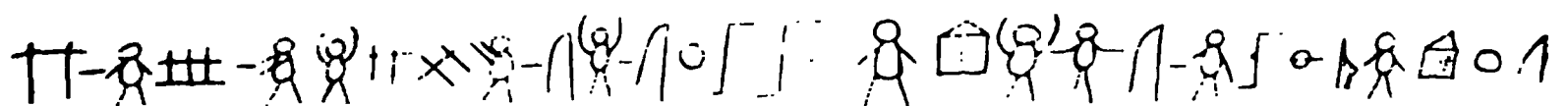
The eye is a very peculiar thing. The part that we call the pupil is really a hole, and the black that we see is the retina. This is a little black curtain like the screen on which a moving picture is thrown. The part that is blue in some people's eyes and brown in others, acts as a protector to the retina, for, if you have noticed, the size of the pupil often changes. When you come into the light it is very small, but when you are in a darkened place it becomes larger. The lens is a transparent ball, and it is what makes us see things. It is right behind the retina and is set in a substance very much like a colorless jelly.

Miss Hall brought several fish eyes to school, and she took one apart for us. The outside of the eye has a very thin substance around it which is very much like thin bone. With a sharp pair of pointed scissors she cut around it in a circle, being very careful not to cut too deep for fear of cutting something that was inside. This left the eye cut in half. In doing this Miss Hall cut into the colored part of the eye and a stream of blue fluid came pouring out. I should think they could use this liquid for dyeing. It surely dyed the paper and our hands. We then looked through the half of an eye and saw first a white and then a dark ring and then a little white ball on the order of a very small glass marble. This was the lens. We took it out of its jelly surroundings and tried to look through it. We could do it, for it was perfectly transparent, but after it had been out for a while it turned milky. Miss Hall then said the children who wanted to could each have an eye and take it apart for themselves. I received one and took it apart but after I had the lens out I pressed on it a little too hard and I thought it was broken, but, instead the top layer came off and I found the part left was perfectly solid, just like glass.

If it were not for our nerves we should see things upside down, for a lens sees them upside down. We proved this by taking a glass lens into a dark room and holding it in front of a white screen with a lighted candle on the other side. After it was focused we saw the candle very clearly but upside down. The same thing would happen to us if it were not for the little white nerve that carries the message to the brain, saying, "It is really this way, not upside down."

*H., R. K., C., and *M.

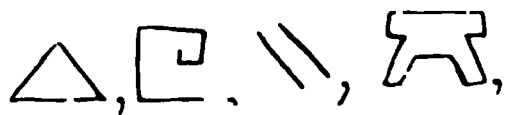
THE A B C'S



If you can read that you will know instantly what this paper tells about.

When we were all four or five we could talk, but we did not know our alphabet. But some people say we cannot talk without one. Well, how did the Hawaiians talk a hundred years ago? They did not have any alphabet but they talked, did they not?

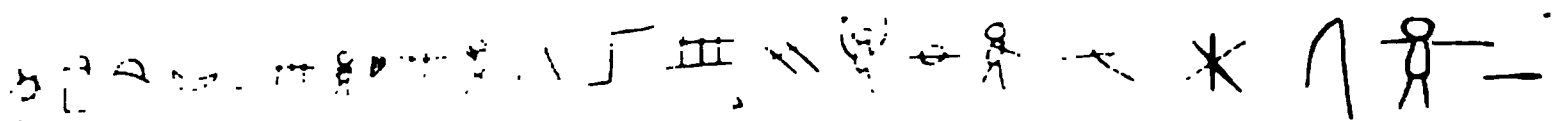
"A B C," a child says at school. Now just sit down and think and find out how alphabets were invented. "Aha!" says a bright brain from the corner, "I know how the alphabets were made. They were made up from old Indian and white men's drawings in the sand and on tree trunks like this,



What letters are those? Why, those are just a few drawings meaning something in those days. From that time on the alphabet grew more common, and when you look back at them in ancient books you can see how much more like the modern ones they grew."



The Indians used picture writing. The above could mean, "Many people are going east, and they will be there many nights," or, "Many people are going east and it will take them many nights to get there," and it may even be translated as, "Many people will go east and they will die before they return." The first figure with the fingers spread out means many, the next means east and the last means sleep. The little figures are used to represent space between words. As the picture writing could be translated in so many ways it was not satisfactory.



Now that there were alphabets they spread to every place where there were people. For instance, the Phoenician traders taught their alphabet to the Greeks, though the Greeks made a few changes. A Greek priest from a monastery in Constantinople was preaching to the Russians and showed them how to show sounds by different signs. A missionary from the United States gave the Hawaiians their alphabet. The Romans, being conquerors of much of Europe, taught the people their alphabet, and today most European people use the Roman alphabet. When the English came to America they brought the English or Roman alphabet with them. Spain and Portugal also used the Roman alphabet. When they settled South America and Mexico they spread the Roman alphabet there. So only the Roman alphabet is used in America.

There are differences in the number of letters in the alphabets of different countries. The Russian alphabet has thirty-five letters, and our alphabet has twenty-six, and the Hawaiian alphabet has eleven or twelve letters in it. The reason for this is that some countries do not have all the sounds that other countries have and so do not need so many letters. Some languages need more letters to form the words because they have

more sounds, like the Russian language.

We get the word "alphabet" from the first two Greek letters. They are alpha, beta. You can readily see the connection between them and the word "alphabet."

J., *M., *M., *K., *J., and *D.

HOMEWORK

A grèat deal of our children's time is given to homework. It is a common practice for teachers to plan that work, yet we cannot supervise it very well at a distance. Would it not be well for us to give our pupils in this matter the possibility of choice and of self-direction? Shall I, moreover, by my action give the child to understand that he is incapable of making his own choices and plans and of directing himself? Shall I crush his self-respect and his ambition by showing that I consider his interests of little worth? Let me not rob him of his rightful leisure—as important a requisite for right living as food and sleep and brains. Let me not discourage his forming the habit of making his own disposal of his own time. I want his life at school and his life at home to be parts of a whole—a whole that is rich, interesting, purposeful, satisfying living, not a treadmill existence.

I tried a plan of voluntary homework. There were three types of arrangement. Sometimes when there was a piece of work that needed everybody's co-operation, I assigned the work for the night. Examples of this are the writing of a paper about our year, to be printed in one of our school publications, or a piece of reading for history. Most commonly I offered two or three alternatives of work that either needed to be done or would be worth doing, and asked the children to choose. Take one night for example. Certain children chose to decorate the covers of their record books; others wrote accounts of a report given that day. We were all engaged, too, in trying to find quotations to illustrate the word "steadfast," for use in a piece of lettering we were planning to do as a gift for the seniors. I suggested that something might be found in a certain story of Socrates, and several of the children chose to do this reading. A third type of homework is more interesting. When I was rather sure that most of the pupils had something they wanted to do, I said, "What do you want to do for homework? Put a little note into my bag telling me what it is. If you can't decide, come to me for advice." I give the homework program of two such nights:

1.	2.
*B. Write play on <i>Little Women</i>	Paper on the report
B. Make plans for toy motorboat (individual project)	Paper on the report
*B. Read <i>Nicholas Nickleby</i>	Paper on the report
C. Read <i>The Pathfinder</i>	Paper on the report
*D. Write play on <i>Little Women</i>	Read and take notes on Japan (individual project)
*E. Read about Russia (individual project)	Paper on the report
F. Learn semaphore signals for Boy Scout test	Look up about Turkey for history
F. Work on telephone I am mak- ing (individual project)	Make pin-hole camera (individual project)
F. Plan my report on the Battle of Hastings	Failed to report
*H. Write play on <i>Little Women</i>	Read book on history of art
J. Drawings for Record Book	Failed to report
J. Draw subway for Record Book	Paper on report
*J. Absent	Ink drawings of ships (individual project)
*J. Read about Russia (individual project)	Paper on report
*J. Find pictures of architecture (individual project)	Finish typewritten stencil of paper for the class
J. Finish paper on report	Paper on report
J. Plan my report on explosives	Look up about the Turks for history
*J. Absent	Absent
*K. Find pictures of architecture (individual project)	Read about Washington, D. C. (individual project)
*L. Absent.	Plan color schemes for interior dec- orating (individual project)
*L. Read about Pueblos	Paper on report
L. Read about Hannibal	Study gun drills
*M. Prepare for the History test	Read about New York (individual project)
*M. Write play on <i>Little Women</i>	Make pictures of furniture (individual project)
M. Read "Lest We Forget"	Read about Children's Crusade to report to history class
P. Draw for Record Book	Read about Saint Francis
*P. Read about Hugh Capet for history	Spelling (assigned). Look up about Turks
R. Draw for Record Book	Paper on report
T. Failed to report	Read <i>The Talisman</i> . Find clipping about the world flight

W. Read book about Charles I	Absent
W. Write about year's work (assigned earlier and not done on time)	Look up about Turks
W. Finish paper on report	Paper on report

Of course there is danger that by always choosing for homework the kind of activity most attractive to them, children may miss exercise in other activities where they need practice. Nothing is easier, of course, than to make occasional assignments to correct this trouble. When I found, therefore, that certain children who did not write well were not choosing to write papers, I told them that because of this need of theirs they must write every time there was an opportunity, and I saw to it that they planned such homework for themselves.

Up to the last month of school, it was my custom to check up in the morning on homework, to collect papers or models or drawings that had been made, or to ask for a word of report, oral or written, on such work as had not resulted in any objective thing. I felt a shortcoming in this system, however. The pupil was not sufficiently conscious of the type, quality, and amount of work that he had been doing. He was not faced with his failures and shortcomings. I might see his record stretching behind him, but he could not. So I devised the following report for the child to keep. It was tacked inside his desk top and was filled out daily. It was on trial for the last month and was faithfully and interestedly kept. Most of the class thought that it helped them to do regular and earnest work. I give examples to illustrate types and habits of work. (pps. 30 and 31).

RECORDS

I have said earlier that it seems very important for anyone who does a piece of work to judge of the success of it after it is finished. We must learn to hold ourselves up to our best; for—though it is platitudinous to say so—no one else can do that, no one else can even know what our best is. Comment from parent or teacher or employer may be sweet to the taste, but unless it is corroborated or refuted by the worker's own intelligent and honest appraising, it will work evil. If unfavorable, it will cause discontent and sourness and rebelliousness. If favorable, it will tend to create sycophancy. In either case, it will make for loss of independence and

NAME *J											
DATE	PIECE OF WORK	Assigned	Chosen	To be handed in	Not to be handed in	Done on time	Done late	Time spent	Quality	Teacher's check	
May 15	Reading (69 pp.).....	*			*	*		60	+		
May 16	Reading (80 pp.).....	*			*	*		75	+		
May 19	Reading (93 pp.).....	*			*	*		90	+		
May 20	Right triangles	*		*		*		30	0		
May 21	Read in our history.....	*			*	*		30	+		
May 22	Worked on world map.....	*			*	*		180	+		
May 23	Designed decoration for parchment.....	*		*		*		60	0		
May 26	Worked on world map.....	*			*	*		120	+		
May 27	Reading (71 pp.).....	*			*	*		60	+		
May 28	Reading in our history.....	*			*	*		30	+		
May 29	Read in our history.....	*			*	*		30	+		
June 2	Absent										
June 3	Absent										
June 4	Reading (82 pp.).....	*			*	*		80	+		
June 5	Write sand dune paper.....	*			*	*		30	+		
June 6	Sand dune paper.....	*			*	*		30	+		
June 9	Sand dune paper.....	*		*		*		30	+		
June 10	Practice telling a story.....	*			*	*		30	0		

Question.—Have you had the experience that you need? Have you missed anything that you need?

Many said without comment that they had not had enough excursions, spelling, arithmetic. A few thought they had not had enough grammar, one not enough reading aloud, two not enough art, one not enough American history.

"If we could have had less in history and used that time for spelling, it would have been better, but I do not mean spell-downs." *M.

"I have missed spelling, and I need it, I think, because there are some words I know a girl in the seventh grade ought to know how to spell, and I do not know how to spell them. I think that almost all of us need more grammar, because I think if we knew more about grammar we could form our sentences better." *K.

"I think if we had more excursions, we would learn things a whole lot better, and I think if we had excursions with some of the reports, it would be more interesting, and if it is possible I think it would be a good plan to take the grade on an excursion to a glass factory for my report, and then the next day I would explain what they didn't understand." *M.

"What I have missed I can gain some other year, while what I have gained is of more value than what I have lost." J.

Question.—In what directions have you gained most?

"This year I think I have gained most the knowledge of common things, such as how to make paper. I also have learned how to give an interesting report." J.

"I have learned how to work by myself, and how much fun it is to work." C.

"I think the thing I gained in most was learning how to work by myself without other people's help." W.

"We have learned better how to express ourselves in words, by giving reports, and how to better express ourselves by writing papers." *H.

"I think individual study has proved to teach us more than anything else. For instance, I did not know what subways were and their purpose, as I never took the time to find out what they were, until we had the report on them, and then I found out. I think this is the case with many other children and other subjects." *D.

"I think I have gained most in seeing material and demonstrations in reports." *B.

"I gained most in individual study, because I made things, learned how to work, and was interested." R.

"This year I have learned to write better papers. I used to hate to write. I have also improved more this year in reading than any other year." C.

"To speak in front of many people." J.

"I have gained in learning how to study myself. I have gained confidence in recitations." *E.

"I think I have gained in the direction of feeling towards my work. At

Question.—*Has this year been in any way different from other school years?*

"In grades before this the teacher has done most of the thinking and teaching, while in this grade we have to teach ourselves and others in the class as well." *J.

"If any of us had a hobby, such as wireless telegraphy, you could work it out in this grade." *J.

"The teacher has given the pupil a chance to choose for himself what he wants to study, and finding his own material from books and magazines and giving him the practice of making a speech or a report to the class when he has finished his study." *B.

"The children have taught mostly, and I like that, for it is not only good for them to have to plan their reports, but I think when a teacher, you might say, gives a report, she tells the facts and does it interestingly, but don't have the drawings, etc., and I think it is things like that that make reports most interesting." *M.

"I feel sort of sore when I miss individual study for something that I think is not near so profiting and interesting." B.

"We had to work more for what we got, and the work was done in such a way that it was fun to do it." C.

Question.—*How has your work at home this year compared with that of other years?*

"When you do not have much home work, you can do it better." L.

"I do not think I have done as much home work as I did in fifth grade and about as much as I did in sixth, but what I did was done willingly, and so I got more out of it." C.

"I haven't done quite as much as last year, but I have learned so much in individual study that it makes up." F.

"I think the home work has been much more interesting this year and for this reason I haven't dreaded it as I used to, especially written papers." *M.

"Other years I did my home work, but this year I have not done it that way but for a few times, but I think the reason is that lots of times we work on our individual study or read, and I would do that in my free time outside of school if it were not home work." *B.

"I think I have done more work this year and spent a longer time on it. For instance, when I made the cover for my Record Book I spent two hours on it, and I wouldn't have been so interested if it had been something else." *J.

"The home work this year is very different than other years,—just like everything else. I have never liked home work, because it used to mean a paper or some French or arithmetic, and I liked to read and work at things at home. So going into this grade I thought that the words home work meant the same thing here, so I have not had as much interest in it until just a couple of weeks ago, when I began to understand what home work meant in the seventh grade." J.

Question.—Have you had the experience that you need? Have you missed anything that you need?

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"I think I have gained in the direction of feeling towards my work. At

at the beginning of the year I had a happy-go-lucky feeling that I would just let my work go good enough to pass as all right and let it go at that, but afterwards I began to want to do my work a little better and try to beat So-and-so in writing a good paper, until now I have gotten so that I try to make all my papers the best I can do." J.

"When you work yourself this way, the result isn't so good, but you learn more." J.

"I'm sure I've gained in broader interests, because before this year I had the impression that some studies were for boys and others for girls, but now I am interested in many things, such as wireless telegraphy, traps, etc. This is mostly on account of other people's work." *B.

"I think that I have gained most in self-direction. That is, judging whether I should work on my home work three-quarters of an hour or three hours, etc. When I thought I needed hard work on a certain thing I would work hard on it." F.

2. *Mothers'.*—I am disappointed in the value of the data collected from mothers, because it is not representative. Only eleven out of thirty-three replied, and of these eleven one was almost entirely ignorant of what was being done at school. The other ten replies, however, are thoughtful. Eight are in general favorable, and two unfavorable. I submit one of each type. The first concerns a boy of unusually good intellectual habits and power, who, his mother feels, did not work up to his best. The second deals with another boy, normal, thoughtful, intelligent:

Question.—Has he done much school work at home?

1. Until within the last month has done very little. Reads a great deal at all times and good books.
2. Yes, especially in getting together material for subjects selected.

Question.—Has he shown interest in his school work by talking of it at home?

1. Not so much as usual. I have had to draw out of him by careful questioning most of the information I have gotten.
2. Yes, his own work and that of members of his class.

Question.—Has he worked at it with interest, concentration, intensity?

1. No. His last paper, on the Battle of Hastings, yes.
2. Yes, with pleasure added.

Question.—Does he feel satisfied with his school year?

1. He is not dissatisfied.
2. Very much so.

Question.—What do you think he has gained?

1. I know that he has gained, but cannot be concrete.
2. (a) Independence and originality in thought.
(b) Independence and originality in gathering material for study.
(c) Observes more closely.
(d) Thought power developed.

- (e) Masters facts more readily.
- (f) Development of written expression.
- (g) Development of oral expression.
- (h) Recognizes that he is an individual and not merely one of a class.
- (i) Best of all, individual work develops initiative.

Question.—What lacks have you felt?

1. My attitude is not critical. It is ignorant. Had I seen an awakening in my child such as Mrs. ——— and Mrs. ——— have seen, I should have proof. I have seen in ——— no tangible evidence of such an awakening, rather groping and uncertainty of direction.

2. Lack of ability to read well, which is due in large measure to poor training (which he received in the public school of his home town) in the first four grades, where a child learns to read.

Question.—Has his school life affected his attitude at home?

1. Not that I am aware of.

2. Unanswered.

3. *Teacher's.*—Now I myself must answer these questions. The data on which I found my answers is perhaps not very scientific, not very methodical, liable to misinterpretation on account of the personal equation, and yet I am trying sincerely to arrive at a just judgment of the year. Let me return to the purposes which I named in the second paragraph of this article.

To Increase Intensity of Individual Action.—Several children in the class certainly did not improve in this regard. Others decidedly did so. Over and over I saw eight and ten children in our small room working for an hour at different projects, some reading, some writing, some drawing, two or three holding a quiet conference in the corner, one working at the typewriter, another operating the mimeograph, and all working industriously and not disturbing one another for the whole period. Again, when I compare the degree of attention given by these same children in one of my own recitations with the degree of attention and effort that they gave when they were engaged on their own projects, I am sure that in several individual cases the quality was much higher in the project period and that in only two cases was it lower.

To Preserve Individual Differences.—In a class recitation J.'s musing habit, his self-absorption, his slow rhythm, his slow speech, did not make for success. But when he worked alone, poring over maps and pictures for an hour at a time, comparing and re-comparing references, browsing in a book and making unexpected discoveries, he was building up a fullness and accuracy of image, a sureness of intellectual grasp, that displayed themselves delight-

fully in his report on forestry, when he talked of trees with a quiet appreciation and gentle authority that impressed even the most shallow ones of the class. A certain girl in a recitation was like an unskilled swimmer in a maelstrom, but she was a tower of strength when she had some practical job in hand, and she felt power and encouragement and won respect at the typewriter and the mimeograph and in the shop. The avidity of another was likely to drive her in impatience to surreptitious drawing or writing or reading during a recitation, but when she could go at her own gait she devoured books on Egypt or the Incas, planned her report like lightning, and gave a talk that held the class enthralled. And so I might go on. Of course faults, alas!—as well as virtue, had their chance to grow. Two boys did meet on the way to the library and exchange epithets and blows. When a little group was alone in the outdoor shop, one weak member did attire himself in a sheet meant to cover the clay model and entertain his mates with a ghost dance. When supposed to be reading a book, K. did spend much of the time gazing around the room. But is it not true that one's faults can be stamped out only when one's own will fights with them? Under outside restraint they only smoulder.

To Train the Power of Choice.—At the beginning of the year perhaps a fourth of the class were without any idea of what they wanted to do. Several others chose things that I recommended or were stimulated by the suggestion of some of their playmates. At the end of a project, many children came to me for suggestion as to what to do next. At the close of the year this was true of very few cases indeed. Several children usually had two or three schemes ahead of them, waiting for the finishing of what was in hand.

To Train the Habits of Self-Direction and Self-Stimulation.—Let me not pretend that children did not sometimes desert their work, that they did not get into trouble with one another, that they did not need help in straightening out moral and intellectual tangles, that they did not lose and destroy material, that they never forgot to put into order rooms where they had been working. Yet when I consider that there were children working all over the school building and outside it, alone or in little groups of two or three, that often some of them had no mature supervision for three or four days except such as I could give vicariously, and that under such conditions only two or three times did any teacher report disorder, and that out of such work came fifty successful reports, and that most

of the children themselves had a deep satisfaction in their work, I feel justified in saying to myself, "The class in general and all individuals in it, with the exception of three or four, have certainly gained somewhat in self-direction and self-stimulation."

To Train the Power of Self-Judgment.—Over and over a child had opportunity to compare his written papers and his oral reports with those of other children, but in steadiness of effort and speed of work he had no means of making such comparisons or comparing himself with himself at different times. In consequence there was less gain than there ought to have been. A good type of a written record of projects will, I hope, make possible a greater growth in this power.

To Stimulate the Habit of Putting One's Powers at the Service of Others.—It is my ambition to have a room in which children are living the sort of life that is lived in a big, wholesome family, with many activities going on, with varieties of temperament being expressed, with the members of the group living in free and friendly co-operation. How far was this hope realized? Two or three of the children volunteered the remark concerning So-and-so, "Oh, he is very much improved." One of the members in a public discussion said, "I think I have gained in one way: I don't seem to be getting into the trouble that I used to." In their papers concerning the year, two or three made remarks upon the interest they felt in hearing about what other people in the room were doing. A fact that I have already mentioned concerning every one's interest in the preparation of his reports to the class, speaks, I think, for the socializing effect.

Another thing that I must consider in making my judgment of the year's work is whether the children had the experiences that they need. People have asked, "Does not this method tend to leave many gaps in the pupil's sum total of knowledge?" It does. It certainly does not make for a logically developed and balanced curriculum from the point of view of subject-matter. But are there not gaps in everybody's sum total of knowledge, however he may have acquired it—in the business man's, in the college professor's, in the gentle reader's? I more and more seriously believe this: that what we need for intelligent and satisfactory living is not so much knowledge as the power to acquire knowledge and the power to apply it. Habits and skill we must get. With them we can dig out for ourselves whatever information we may need. So I refuse to worry

because this class missed the Greek myths or the geography of Africa or the science of soils. But I am concerned as to whether they had types of activity that will engender needed habits and powers. Did they have enough excursions to build up the habit of demanding first-hand observation and the habit of keeping linked up with the world at large? Did every child perform enough experiments and handle enough material to acquire skill in manipulation and to establish a habit of investigation at first hand? Did he have sufficient chance to express himself orally before an audience and to express himself in writing, so that he came to feel power and pleasure in these forms? Did he learn to use books for pleasure and for study, to use them intelligently, critically, appreciatively? Did he learn to use pencil and brush with pleasure and purpose and some effectiveness? Did he become able to use common tools with any degree of skill: hammer, saw, plane, sewing machine, needle, typewriter, mimeograph, camera, tank developer, jig-saw, wood lathe, ball and bat? My curriculum, that is, looks somewhat like this: study, experiment, excursion, handwork, reading, writing, reports, drawing, singing, dramatic play. I give such an analyzed record of this year's work for each child, omitting the things common to all—history, modern language, number, gymnastics, singing

SUPERVISION

In answer to most of the questions I have asked as to whether the year was thoroughly satisfactory, I must say, "No." Part of the cause of the failure lies in the large size of the class. To many teachers, thirty-three will seem a small group. Alas, that it is so! For years our educational leaders have been preaching individual attention to individual needs. How can they expect to get it with a group whose numbers alone swallow the individuals? We do not want mass teaching; we want such teaching as a wise mother can give. Who ever heard of a well-mothered family of thirty or even of twenty? There was not time in an hour or so, with this class of thirty-three, for the teacher to consult with all who needed to talk with her. This difficulty resulted in rather voluminous writing of notes at night. Perhaps a few examples of these will show what type of thing took the place of the usual directing. F. had made a periscope and was later preparing to explain to the class how it operated, but the day before, on account of lack of material,

*See inserted table.

he had felt rather discouraged at the end of the hour. I found two small mirrors, concave and convex, and gave them to him the next day, with the following note:

Dear F.: Put these little concave and convex mirrors side by side, standing up, so that you can see yourself in them both at the same time. Put your face close to them. Slowly walk back from them, all the time noticing your reflection. What differences? What changes? Can you explain with drawings? Remember that the angle of incidence equals the angle of reflection.

When L. and M. were making their mimeograph they put it together very badly at the corners. I made a partial model of a half-lap joint and gave it to them with this note:

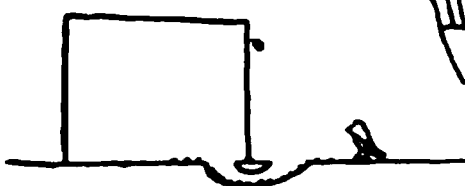
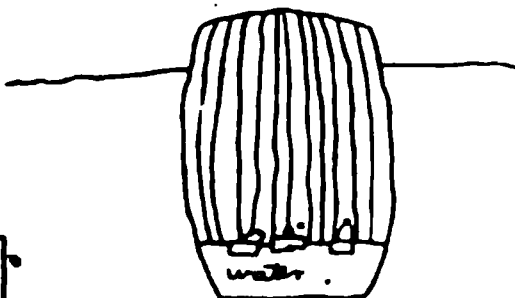
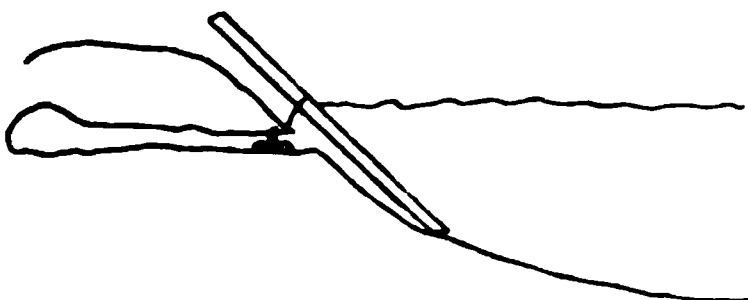
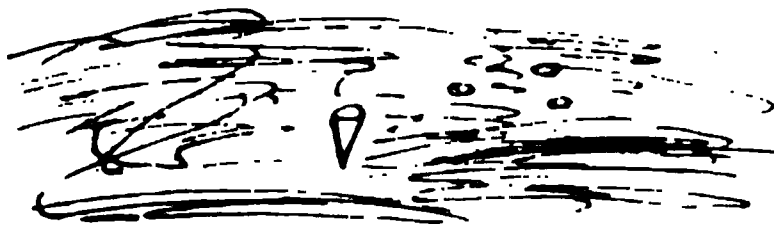
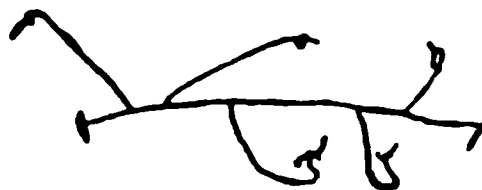
Dear L. and M.: Here is one side of a half-lap joint. Can you see what you have to do to the other piece? Mark it and show it to me. What do you think of this as a joint for your mimeograph?

The theatre group had given me a copy of a play they had written, in which a boy was arrested for a crime and brought to trial. They explained that they were planning to make a series of plays, illustrating different types of trials. (The class had been reading of the reforms in legal procedure made by Henry II.) When I returned the play the next day I accompanied it with a copy of *Don Quixote* and this letter:

Dear J.: You and R. are making plays of different kinds of trials. Is that the idea? It is a good one. I have given R. references on his mediaeval scene. I think your plot is a little "thin," as we say. Read the account in *Don Quixote*, pp. 640 to 644, and see whether you don't think that would make a very good play.

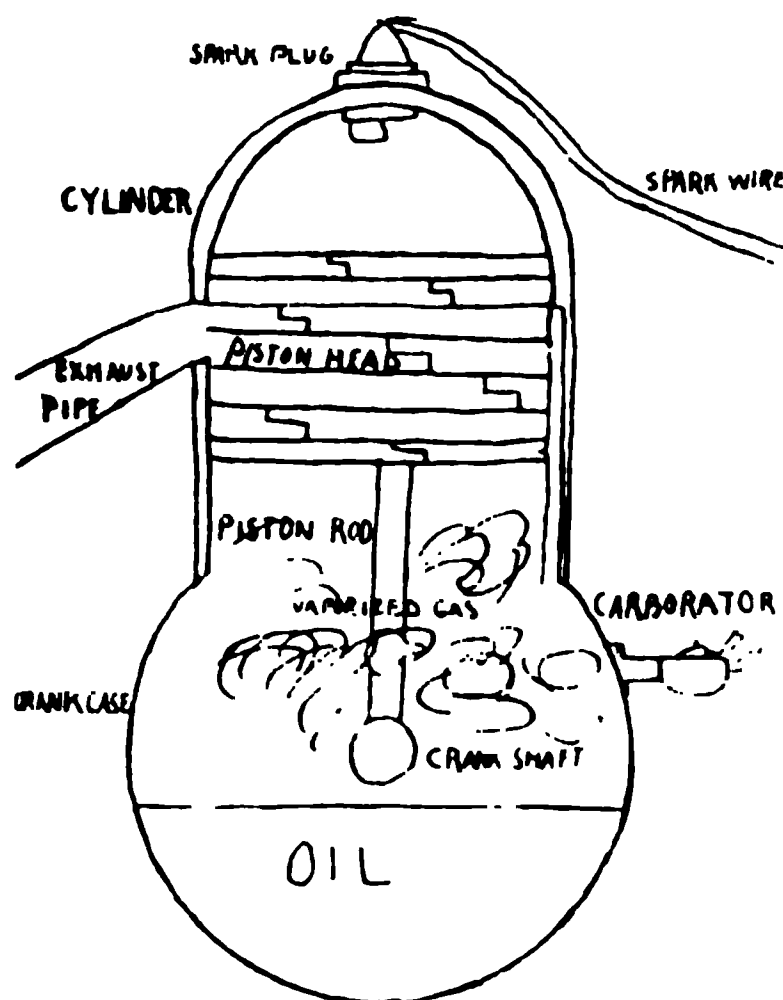
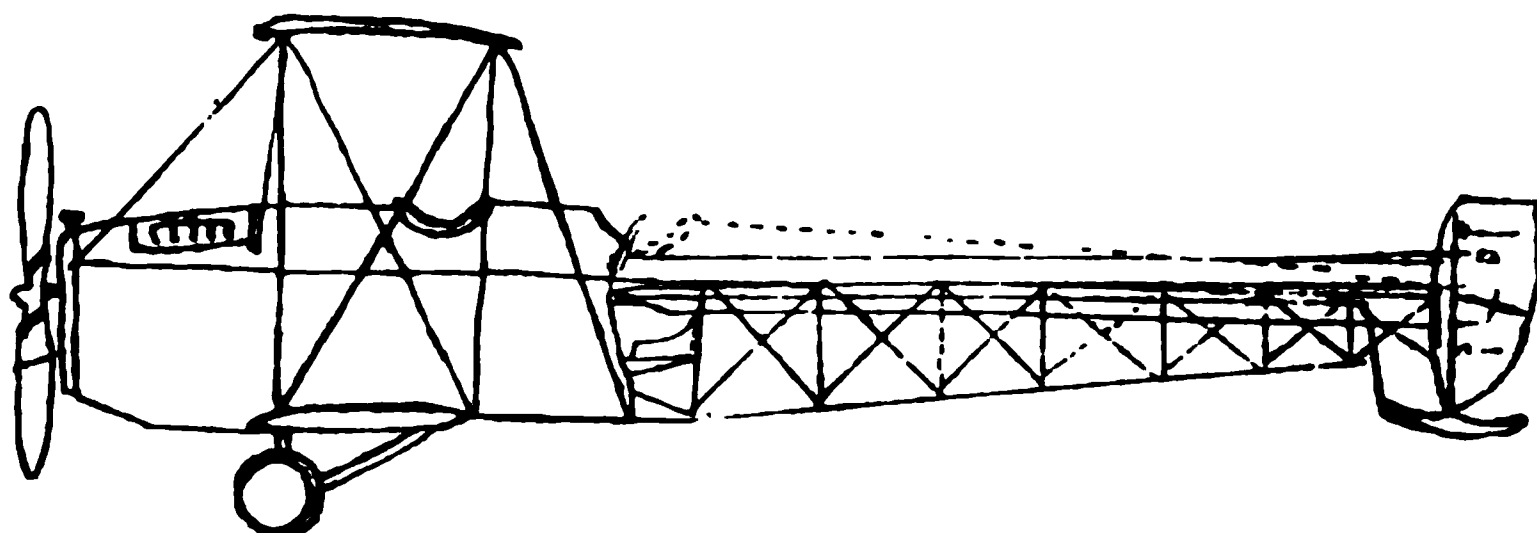
Again, a partial cause of the failure to meet the requirements of the situation lies in the teacher's lack of knowledge and skill. One teacher, I fear, cannot know well enough all the things that a group of even fifteen children of twelve years want to know and ought to know.

We were able to get for the study of Japanese art, reported earlier in this article, the kind of help that seems to be needed. The girls applied to the art teacher for Japanese pictures and for help in understanding them. She put at their disposal a good collection and gave them three or four periods of her time in explaining the drawings and answering the questions. At other times the children studied the pictures alone, or experimented with the Japanese brushes or stencils, or went on with their general reading on Japan. Such attempts to help with a project have not always been successful. A small group of boys who were studying wireless, for

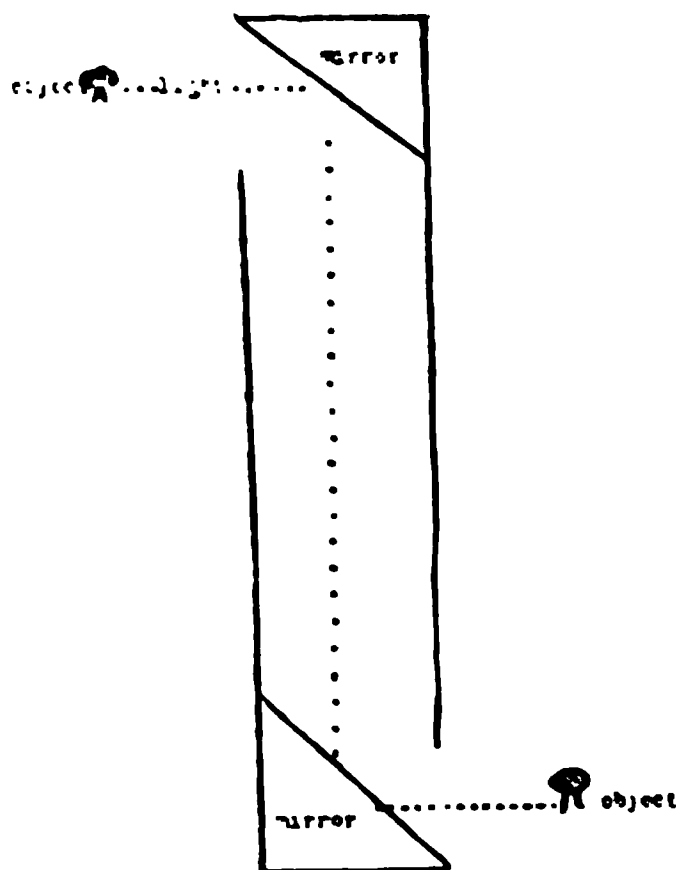


CHILDREN'S DRAWINGS OF TRAPS

TWO-SEATER BIPLANE PARTIALLY STRIPPED.



ONE TYPE OF PERISCOPE.



DRAWINGS USED IN REPORTS

example, came back one day and said: "We think maybe we could get along by ourselves. Mr. ----- wants us to study the theory of wireless, and we don't want to. We want to set it up and learn how it works. It's all right to study the theory, only that wasn't what we wanted to do." In one other instance a teacher's attempt to swing the project into what seemed to a mature person a more

thorough, logical, and educative direction, quite took the adventure out of the self-directed plan and entirely wrecked the scheme, so that the girls appealed to me to be allowed to drop it. Another little girl, who was trying to learn about the Batik process of dyeing, courteously refused help from a teacher, evidently enjoying the thrill of her own experimenting, which, by the way, eventuated in a considerable degree of success. It is not a teacher, in the ordinary sense of the term, that is needed, but a consulting specialist.

I believe that a faculty could be organized to help and to help in the spirit of the individual project. Let me submit here a suggested plan given by another member of this faculty. It was made without much deliberation and because of lack of time has had no further consideration. Yet it seems quite possible and very stimulating and promising. Let there be for the elementary school several special teachers of specialized knowledge—drawing and painting, nature study, geography, history, physical and chemical science, clay-modeling, carpentry, metal-working, printing, photography, sewing, cooking. Let each of these teachers be in charge of a room well equipped for the pursuit of his special subject. Let it be the business of each of these people, not to teach, but to give help to those seeking it. During any time of the day children from all the elementary school might be free to go, with the consent of their class teachers, to one or another of these rooms with their varied individual projects, to ask for advice or to use equipment. If congestion resulted, certain hours could be left for children of primary grades, others for people of middle grades, still others for older children. Would not work under such conditions—choosing one's own subject, directing one's self, going at one's own speed, yet finding it possible to get expert help and advice when one needed them—would not work under such conditions be satisfying to the soul? Would it not tend to train such individuals as the world needs?

Whether any causes of failure exist in the exigencies of the method we cannot know, surely, until it has been tried by various teachers under various conditions, and until it has been done with one group of children through several years. For this is a method of living and of growing, a matter not of one isolated year, but of interlinking and mutually correcting years.

The question is often asked, "Is this method possible in schools of the ordinary type with the usual conditions?" I should think not. But neither is any other fundamentally right teaching, for

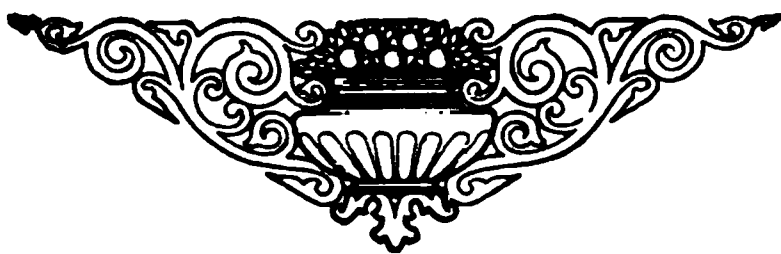
ADVENTURES IN CIVICS

The following three experiments in teaching problems of citizenship are surely similar to those conducted in schools all over the country. They are recorded here simply in order to show the opportunities which an adaptable curriculum and schedule provide for the intensive study of certain subjects,---subjects which are of timely interest but which are charged also with a permanent significance and which possess educational value. The study of such problems may lead to an understanding of community life and government which is as unified and inclusive as that developed through the average consecutive course in civics. It may, moreover, through its very concreteness, leave the pupil with a more real sense of community experience than that which the other type of course would give.

Certain catastrophes and certain successes in our experiences, however, suggest a few warnings about this type of study. Problems must be chosen very carefully. The teacher must make sure that the problem is tangible; that it is not too complex, or, if it is inevitably complex, that only a phase of it be selected for study. It should not be complete in itself, a carefully weighed, counted and crated assortment of facts. It must lead out from itself in many directions which might appeal to different types of mind and open up new avenues of exploration. In developing the study the teacher who keeps sensitive to group and personal interests within the class will gather new hints from the discussion, develop them into possible fields to explore, change her plans as interests change, at the same time keeping a strong continuity of attention upon main issues. As she studies the material she will find ways to train the pupils in different mental processes. The definite teaching of such thought processes, sometimes assigned arbitrarily to the labelled compartments of science, history, mathematics, literature, or composition, may be welded into the experience of work on one problem. The natural result is that the child's thinking becomes more resourceful, more unified, more controlled and intelligent.

The whole educational value of the subject is often not discovered until the experiment is well under way. In the last of the instances here described this was particularly true. The subject

are not the three great fundamental needs in our common schools today more space, smaller classes, more educational material? Any other reforms seem like mere salves applied to a sore resulting from a disorder of the blood. Two big rooms for every class, one for quiet work and one for noisy work. Carpenter tools and lumber, printing press, typewriters, a mimeograph, a sewing machine, a stove and kitchen utensils, a sand table, running water, Bunsen burners, clay, plaster, plenty of paper and cardboard and crayons and paints and scissors and books and pictures, an aquarium, and a sinking fund for incidental purchases. Freedom to let children use these things and to lead them out upon excursions to fields and shops and museums. A free, fluid curriculum, growing with the children and with the conditions of the times. A faculty organized for giving individual attention to individual needs. Many an earnest and intelligent teacher knows that these are the inalienable rights of children, the indispensable and minimum prerequisites of any true education.



consulting the necessary references to make his statements accurate. The special cases demanded knowledge of a variety of laws. For instance, the problem of the Chinaman demanded consideration differing widely from that of the Italian. The illiterate, the dependent, the man who had let the time limit of his first papers expire, and a number of other cases were represented.

The court sat when and where it could. The officials were changed often so that many members of the class might have the opportunity to hear and judge cases. From time to time three or four children simply left their other work (for the practicability of this plan see the article on the *Project Method*, in this volume), arranged the court, and heard the cases of the day, until every candidate had been admitted to or excluded from citizenship, according to the law.

The class wanted to give the experience to the school in a vivid way, so they decided to give a morning exercise in the form of a play. Together they worked out a rough plan. Choosing the scenes they cared to work on, they formed four groups to write the four-scene play on the basis of the general plan all had accepted. Two of these groups met with teachers; the other two did their work alone. When it was done, the class met, read the whole play, and made the needed revisions; parts were then assigned. There were only two rehearsals before the class gave the play for the school. The speeches were not actually memorized, because by this time the children were so familiar with their material that, with the plan in mind, they could go ahead with a more spontaneous presentation. The only part in the play in which the actors were dependent upon memorized speeches was the part in which a would-be citizen, ignorant of the English language, explained her situation in her "native" French tongue.

The four scenes of the play were: a discussion in the street between a newly made citizen and an alien on the values of United States citizenship; the issuing of first papers in the Federal Building; the filing of the second paper in the naturalization office; and the Naturalization Court, in which a number of persons took the oath and received their certificates of citizenship. In this last scene the United States flag hanging over the judge's desk, the use of the official school seal in stamping the documents, the dignified observance of court ceremonial, the earnestness of the people on the stage, and their freedom in the use of fact, made the audience feel the

expanded amazingly with the actual work. It was undertaken with the hope that six weeks of work upon it would be worth while. The initial problem alone consumed six weeks and made the focus for the work of the entire remainder of the year.

NOTE.—As the Morning Exercises are frequently referred to in this article, the following explanatory paragraph from *Studies in Education*, Volume II, *The Morning Exercise as a Socializing Influence*, is reprinted here.

"The Morning Exercise of the Francis W. Parker School is the daily assembly of the whole school. It differs from the usual chapel exercise in that it is fundamentally social in purpose. The exercises grow out of the daily work of the school, or out of the interest of the children in some large, absorbing, outside question. They are usually the culmination of some line of study. The subject is sometimes science, the telling or illustrating of nature observations; the story of some visit to the farm, the art gallery or workshop; history, current events; the massing of the literature and music of some special subject or special day; the telling of stories that delight the children's hearts; or the discussion of some problem of vital significance in the community life of this school."

1. ON BECOMING A CITIZEN—SEVENTH GRADE

The seventh grade was studying the idea of a world state. In the discussion of the Roman Empire the problems of citizenship—the requirements, duties and privileges which it entailed—led the interest of the children one day to the more immediate problem of citizenship in the United States. They decided to find out all they could at home that evening about how one becomes a citizen in this country. The next day this fragmentary information was brought before the group, and after they had taken stock of it together, new plans were made for getting fuller information.

A group of the children who were particularly interested in the question visited the Naturalization Court in the Federal Building. They organized and presented to the class a report in the form of a scene in the court, which so interested the class that they decided to form their own naturalization court. The whole subject was taken up from the point of view of the real problems of different kinds of people, not from the more allegorical point of view which starts with the abstract idea and clothes it in a garment of concrete illustration. Each child chose to impersonate some fictitious person wishing to become an American citizen. Copies of the government blanks for the first and second papers were secured, and each one filled in the information demanded in the application for citizenship,

consulting the necessary references to make his statements accurate. The special cases demanded knowledge of a variety of laws. For instance, the problem of the Chinaman demanded consideration differing widely from that of the Italian. The illiterate, the dependent, the man who had let the time limit of his first papers expire, and a number of other cases were represented.

The court sat when and where it could. The officials were changed often so that many members of the class might have the opportunity to hear and judge cases. From time to time three or four children simply left their other work (for the practicability of this plan see the article on the *Project Method*, in this volume), arranged the court, and heard the cases of the day, until every candidate had been admitted to or excluded from citizenship, according to the law.

The class wanted to give the experience to the school in a vivid way, so they decided to give a morning exercise in the form of a play. Together they worked out a rough plan. Choosing the scenes they cared to work on, they formed four groups to write the four-scene play on the basis of the general plan all had accepted. Two of these groups met with teachers; the other two did their work alone. When it was done, the class met, read the whole play, and made the needed revisions; parts were then assigned. There were only two rehearsals before the class gave the play for the school. The speeches were not actually memorized, because by this time the children were so familiar with their material that, with the plan in mind, they could go ahead with a more spontaneous presentation. The only part in the play in which the actors were dependent upon memorized speeches was the part in which a would-be citizen, ignorant of the English language, explained her situation in her "native" French tongue.

The four scenes of the play were: a discussion in the street between a newly made citizen and an alien on the values of United States citizenship; the issuing of first papers in the Federal Building; the filing of the second paper in the naturalization office; and the Naturalization Court, in which a number of persons took the oath and received their certificates of citizenship. In this last scene the United States flag hanging over the judge's desk, the use of the official school seal in stamping the documents, the dignified observance of court ceremonial, the earnestness of the people on the stage, and their freedom in the use of fact, made the audience feel the

dignity and the reality of the occasion.

Since there was no rigid time-limiting schedule in the seventh grade to hamper the freedom of the work, it is difficult to estimate the exact time spent on the naturalization subject. It ran along intermittently for perhaps two months. During most of that time there was only an occasional half-hour session of the court for examination and issuing of certificates. Now and then, when need arose, the class spent a longer time writing the judge's speech, hearing new facts gathered by somebody, writing the scenes of the play and rehearsing.

II. THE GOVERNMENT OF GERMANY—EIGHTH GRADE

When a morning exercise elicits questions from everywhere in the assembly, as this one on Germany's government did, and when the questions are answered by the class giving the exercise as well as from everywhere in the assembly, and when additional information is volunteered by teachers or older pupils, we are disposed to think that the exercise has been satisfactory from the point of view of social service. The stenographic report which follows, of the eighth grade morning exercise on the imperial government of Germany (given in 1917, long before the collapse of this government) shows the brisk exchange of question and answer at the close, an indication that the school valued the information which the class was trying to give.

Work on this subject was undertaken with the idea of substituting patriotism for jingoism, by giving American boys and girls certain facts from which they themselves could make deductions. Of the importance of understanding the German government, as far as one can understand a government not his own, I need say nothing. But to indicate the children's appreciation of this importance, I think the following fact is not irrelevant. Just as we had finished the study, we were opportunely asked to present our information in a morning exercise. The class divided the subject into nine parts, and arranged themselves in groups of two or three. The general form of statement, "If in America" such and such a thing were true, "that would not be democratic," was of course agreed upon before the groups went to work separately. They worked in these groups for one forty-minute period in the endeavor to make their points clear, and—this is the part I thought illuminating—in every case but one the statement submitted by the group was used

in the morning exercise, with only very minor changes.

This comparative accuracy of information, after a very limited amount of study in which no papers had been written and no text used, is due certainly to the eagerness of the class to know about German government. Earlier in the year they had read and studied Mr. Wilson's reply to the Pope's peace note. They had selected, as the pivotal idea in this paper, the statement that we cannot take the word of the "present German government" because it is not a democratic government. In order to discover what Mr. Wilson meant by a democratic government, they had made a careful study of our constitution, its history as well as its content. Then they were eager to study the German government and find out what an autocracy was. The teacher knew of no available text. (She would now have used the pamphlet on the subject issued by the War Information Bureau: *The Government of Germany*, by Hazen.) The study had to be done, therefore, almost entirely from the children's questions. The class used its previous knowledge of the American constitution as a basis for comparison. The whole matter of preparation for this exercise occupied not more than three periods, an indication that the interest was keen and the intelligence active, and that the children's information, though gained in a very short time, was accurate and usable.

AUTOCRACY AND DEMOCRACY--A MORNING EXERCISE

John. Americans believe in democracy. Ours is a government of the people, by the people, for the people. The Declaration of Independence says, "All men are created equal." For this principle our young men are giving their lives. America does not like war. President Wilson said: "It is a fearful thing to lead this great peaceful people into war, the most terrible and disastrous of all wars, civilization itself seeming to be in the balance. But the right is more precious than peace, and we shall fight for the thing that we have always carried nearest to our hearts, for democracy."

As everybody knows, in August the President wrote a reply to the Pope's peace note. In this famous reply he said that we cannot fight this war again; that the *status quo ante bellum*, which the Pope proposes to return to, is not a basis for lasting peace; that it would merely give Germany time to recuperate; that the test of every plan for peace is: is it based upon the faith of all the people involved?—and finally, that we cannot take the word of the present German government. This was the President's famous answer to the Pope's peace note. We cannot take the word of Germany because it is not the word of the German people. This morning we are endeavoring to tell what we mean when we say that the word of the German government is not the word of the German people. In other words, we are

endeavoring to tell what autocracy is. It was because we wished to know what autocracy meant, that we studied the German government, and we thought that you, who are all loyal Americans, would like to understand it, too.

Alexis. If in America the governors of the state were governors by divine right, this would be as it is in Germany, and would not be democratic. If these governors, who were chosen by God, made a constitution without referring it to the people, this would not be democratic. In America, however, this was not the case. The framers of the constitution were elected by the people, and after the constitution was drafted, it was put before the people to vote on. This was democratic. In Germany the people who made the constitution were not elected or appointed by the people, but were chosen by divine right, and after they had made the constitution the people were made to abide by it without any voice in the matter whatsoever.

Juniata. If, according to this constitution, the governor of New York would always be the President of the country, that would not be democratic. However, this is the case in Germany, for according to the constitution the King of Prussia is always the Emperor of Germany. Prussia has, to be sure, three-fifths of the population of Germany, the greatest part of the wealth, and all the large cities.

Marion. The governor and legislature of New York are elected by direct, popular, secret ballot. This is, of course, very democratic. This, however, is not the case in Prussia. If, in the state of New York, four percent of the population, only the very wealthy people, had one-third of the votes, while eighty-five percent, the poor people, had only one-third of the votes, that would be very undemocratic. That is how it has been in Prussia. The rich man's vote counted twenty times as much as the poor man's. The German Junkers are few but very rich, and their votes count as much as all the common people's votes.

Charles. If in America only the millionaires of New York City were appointed to represent the New York people in the Senate, this would be very undemocratic. In Germany the King of Prussia, namely the Kaiser, appoints only Prussian Junkers to represent Prussia in the Bundesrat. If in America only the millionaires of New York State were appointed by the President to his cabinet, it would be very undemocratic. In Germany the Kaiser appoints only Prussian Junkers to his cabinet; also, the highest officers of the army and navy are Junkers.

If in New York State only a few men owned almost all the land and controlled almost all the votes, it would be very undemocratic. In Prussia the Junkers own most of the land and control almost all of the votes. They are responsible for the militarism and jingoism of Germany, and they are the ones that have stood for a powerful army and navy.

Catherine. If in America the House of Representatives were the only house elected by the people, that would not be democratic. In Germany the Reichstag is the only house elected by direct popular vote, by secret ballot. It has great influence but no real power. If in America the House of Representatives were not paid, that would not be democratic. In Germany the

Reichstag has voted over and over again that its members be paid, but this bill has always been defeated by the Bundesrat, which is dominated by Prussian Junkers. If in America the State of New York had more than half the members of the House of Representatives, that would not be fair to the rest of the country. In Germany, Prussia has 238 of the 397 members of the Reichstag.

Lisette. It is necessary for me to compare England and Germany instead of the United States and Germany. If in England the Prime Minister were chosen by the king instead of by the people, this would not be democratic. In Germany the Chancellor is chosen by the Kaiser. Up to the present time the Chancellors of Germany have always been Junkers, but at present von Hertling of Bavaria is the Chancellor.

Carter. If in England the Prime Minister repeatedly brought a bill before the House of Commons, and they repeatedly refused to pass this bill, and the Prime Minister yet retained his position, this would not be democratic. This is the case in Germany. In England if the Prime Minister presents a bill to the House of Commons, and they refuse to pass the bill, Parliament is dissolved and a new election takes place. This is called parliamentary responsibility. Some people think England is more democratic than America because of its parliamentary responsibility.

Maxine. If we had class distinctions, such as there are in Germany, between the Junkers, middle class, and peasants, it would be very undemocratic. The Junkers are wealthy land owners who hire the peasants to work for them, and they pay these peasants very poor wages. If a person is born a peasant he cannot become a member of a higher class. Caste is everywhere. It rules in education, and especially in politics. Official rank has an authority in Germany not to be found in any other country.

Carl. If in America the President were the autocratic ruler of three-fifths of the United States, it would not be democratic. In Germany the Kaiser has almost complete autocratic rule over Prussia, which is three-fifths of Germany. The Kaiser has his office by divine right. In America the President has command of the army and navy during his four-year term. In Germany, however, the Kaiser has command of the army and navy for life.

Edward. We have tried to point out to you some of the features of autocracy. We have left out some matters such as the unfair electoral vote, which we do not know much about. We have tried to show you, also, how the Reichstag has really no power, and that the Bundesrat, which is not elected by the people, really controls legislation. We have shown that Prussia controls Germany, and that the Kaiser and the Junker class control Prussia. It is certainly not very democratic to have a Kaiser who rules by divine right, or is chosen by God. If there are any questions, we will try to answer them.

Question. What is the secret ballot?

Eighth Grader. The man in casting his vote does not give it to anybody openly, but slips it into a box without anyone else having seen it. We have the secret ballot in all our elections.

Question. What is the difference between Germany and Prussia?

Eighth Grader. Prussia is one of the states of Germany.

Question. What is a Junker?

High School Boy. A Junker is a nobleman. They are all called Junkers if they are worth a certain sum of money and own a large area of land. It is a hereditary position. A man cannot be a peasant and rise to be a Junker. Junker means "young nobleman."

Eighth Grader. I forgot to say that although we call Germany autocratic, in some ways it is like a democracy. The government takes care of the poorer classes a great deal better than we do.

Question. You say the Kaiser rules over three-fifths of Germany. Who controls the other two-fifths?

Eighth Grader. The other two-fifths comprise over twenty-four states. The largest of these is Bavaria, and then comes Saxony, and then a number of smaller ones.

Question. Doesn't the Kaiser rule all these states?

Eighth Grader. The Kaiser rules all Germany. But each state has a king or duke or grand duke, so the Kaiser does not have autocratic rule in any state but Prussia.

Question. Are there other rulers that rule by divine right, as in Germany?

Eighth Grader. Japan.

Question. Is the Reichstag in Germany the same as our Congress in Washington?

Eighth Grader. The Reichstag is more like our House of Representatives, because it represents the people—or at least it is supposed to—but its power is very weak. They have no parliamentary responsibility. The Bundesrat is more like our Senate: that is, its members come from the different states. But our Senate is elected by the people, while the members of the Bundesrat are appointed by the rulers of their respective countries. Twenty members come from Prussia and are appointed by the Kaiser. It takes only fourteen votes to defeat any change in the constitution, so the Kaiser can prevent the Reichstag from making Germany more democratic.

III. A WAR POEM

The same class agreed to try to write a poem which should express what Americans were thinking about the war. Their product follows:

The gauntlet of battle is flung at our feet;
We march with high purpose the challenge to meet.
We shame not our fathers of yore.
More precious than peace are Justice and Right.
Let our country help win them by blood and by might,
For this is a war to end war.

The people are shouting all over the world,
"Let tyranny down from its dark throne be hurled,
For Liberty's sake evermore."
Our banners are flung full to the wind—
And well may they tremble, those who have sinned—
For this is a war to end war.

Nor treasure nor land for ourselves shall we take;
We fight as one champion for all mankind's sake,
That Justice may rule evermore.
No longer can patience the trial endure;
We fight Freedom's battle to make peace secure—
For this is a war to end war.

Obviously, it is not because of the high quality of the verse that I consider this piece of composition worthy of record and comment. Some of the children were very proud of it. "I thought it would be sung all over the world," one of them said, and many of the children frankly avowed that it was the "best war poem they had read." But there were of course other children of fine natural taste, careful home and school training in appreciation, and dawning power of expression, who knew that there were poems more beautiful than theirs. From the teacher's point of view, the work had value quite aside from the quality of the final product. In the first place, the eagerness and earnestness with which the children undertook so novel a task was gratifying. Their spirit was one of pride in their Americanism, fairly free from jingoism.

It was interesting to see the use they made of work in other subjects. They had studied President Wilson's reply to the Pope's peace plea. The issue, democracy against autoocracy, was getting its somewhat shadowy outline defined in their minds by the careful comparison they were making of the American with the German constitution, and they studied eagerly, for help in ideas and expression, all quotations that were given them from President Wilson's addresses.

As all teachers know, there is a limit to the time which can profitably be spent upon such a piece of work; still we did give several lessons to it. We first agreed upon a first line and a rhyme scheme. The interest of the children was evinced by the fact that they kept the task in mind after this initial step, and brought in new

lines as they worked them out. The lines we rejected—much more numerous, of course, than those we kept—were rejected generally because the idea had been better expressed by some one else. When we had finished the verses, a small volunteer group, working with the music teacher, made a melody for them.

IV. A COURSE IN CIVICS AND ENGLISH—NINTH GRADE

When school opened in September, 1917, the subject of the war and our country's share in it appeared perpetually in the conversation of the ninth grade. Summer experiences were exchanged—watching troop trains pass daily, visiting one of the big camps, talking with a draft board official, seeing a brother off to France. A day or two of general discussion resulted in a long list of questions about our part in the war. Partly because most of the children's interest and their fragmentary glimpses of army organization, and partly because, having worked in a draft board office during the summer, I was convinced that there was much in the subject to interest high school people, we undertook as our first problem the Selective Service Act and its operation. The English and civics courses were combined, making a total of seven periods a week, and the two teachers planned the course together. In mingling the two subjects one had to watch carefully lest the interest of the one subject crowd out the qualities which are essential to work in the other. One had to make certain that there should be good reading and definite training in the elements of composition.

We started out with a brief analysis of the main features of the law itself. Two groups reported on the compulsory military service schemes of France and Germany. Then we decided to have our own draft board. Securing sample blanks from a local board, we named a registration hour, and each child chose to represent some one within the registration requirements. We chose our local board on a rotating scheme, so that most of the class members served at one time or another.

When the registration was complete, the local board shuffled the blanks and gave them their "red ink" or serial numbers. A group undertook the drawing of the "call" numbers in Washington, and the cards were renumbered in "call" order by the local board. The board was then ready for the filing of exemption claims, and the registrants were summoned. Each registrant was expected to study his own situation thoroughly, in the light of the regulations,

and to fill out his own papers, with the privilege of consulting the local board or the teacher. We found that our group included, besides those who made no claim for exemption, the allied alien, the neutral alien, the enemy alien, the declarant, a variety of dependency cases, and several who, because they were involved in government service or necessary industries, were exempt from military service. A few of the children visited local boards in their neighborhoods, and others sought advice about their cases from officials with whom they were acquainted. After the exemption affidavits had been filed, the board met and discussed the cases, calling in all the doubtful ones for conference before a decision was made. The most difficult cases to decide were the dependency ones, and a rather sketchy attempt was made to work out a minimum budget for individuals and for families, as an aid in fair decision. The result, compounded from questioning a few families living under different economic conditions, and from finding out prices of essential commodities, was more suggestive than it was accurate.

The report of the board to the class suggested a morning exercise, which was later given: a careful explanation to the school of the workings of the draft, followed by the presentation of a scene in a local board office when registrants were summoned to present or waive their exemption claims. Discussion in the class carried us over to a brief study of the conditions which were met by the local board with which I had been working. This immigrant district, with twelve thousand registrants crowded into approximately one square mile, including a large percentage of aliens of many nationalities, with an imperative dependency claim attached to almost every case, challenged the class to serious thinking. Here are a few of the questions they formulated: Why are certain sections of the city desperately overcrowded, and what is the effect of this crowding upon the families living there? Why is it that immigrants are usually living in these districts? Do the immigrant American soldiers know what they are fighting for? Is a person really American when he has been sworn in as a citizen? How can we make America's ideals clear to immigrants? What has America to offer them? What are America's ideals, anyway? How did these ideals come to be formulated? What has made people in Europe, ever since 1492, want to leave their homes and come to America? Does the word "American" mean the type of the early colonist or that of the more recent immigrant? What are the privileges and the

obligations of citizenship in the country?

Gradually the course centered about two big subjects: migrations to America, and the development of democracy in America. We started with a very brief review of the voyages of discovery and exploration—a subject which had been studied in earlier grades. Then for almost three months we studied certain colonial groups: the Pilgrims, the Puritans, the Cavaliers, and the Dutch. Why did these people come to America? How did they have to alter their mode of living in America? What did America give to them? What did they give to America? This demanded a good deal of delving into history, for it was our aim to base the discussion, not upon guesswork but upon definite information, and to emphasize the need of accurate thought and statement. Perhaps it is too great a problem to set before people with so little historical background. The chief aim of this work, however, and of our later work, lay in the attempt to make it possible for the children to become aware of certain great truths, the special worth and contribution to our national life of people of different nationalities; the responsibility a democracy must assume in protecting and extending its liberty and justice; the struggle toward democracy here and in the European countries whence many of our citizens come; the loyalty of many of these new citizens to America as it is shown in their active, responsible citizenship; the responsibility of America now and in the future toward the growth of democracy in the world.

Out of the colonial study the problem of the negro and his relation to the national life emerged, and several weeks were spent in studying this and certain facts of the reconstruction period at the close of the Civil War. This work brought out the bad effects of extreme party feeling, the inability of a race to acquire an intelligent sense of responsibility over night, and the duty of the nation to educate such a group toward citizenship.

The last three months were spent on recent immigrations to America. After a brief study of the early nineteenth century movements of groups of Germans, British, and Scandinavians toward this country, the tremendous influx of foreigners after 1880 was taken up in greater detail: the proportions and distribution of the different nationalities; the reasons for their coming; the present immigration law and regulations; the organizations in Chicago which help to secure protection and employment; the types of work

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usually done by immigrants.

This may sound like the outline of a college seminar course, and introducing it into the first year of high school may seem an utter absurdity. But the reader must of course realize that the whole thing was carried on in a manner much more child-like and fragmentary and concrete than these terms imply. Nevertheless, thorough work in the reading of difficult books was certainly done. Through this work, moreover, the use of reference books and of the library was learned. The necessity of taking notes in clear, reduced form, and of putting in order scraps of information from various sources, showed the value of the topical outline, the principles of which were learned and put into service at the beginning of the year. A number of stories were written about colonial life, and a Pilgrim play, portraying the life of a Pilgrim family in Holland and in Massachusetts, was written and presented. Stories, diaries, and descriptions were written about immigrants of today. A morning exercise on the draft—described earlier in this article—was given. A rough map showing the chief foreign districts of Chicago was made on the basis of our own wanderings about the city. Editorials were composed, urging increased or decreased restriction of immigration, demanding training in citizenship, or explaining American ideals to the newcomer. The subject was rich in suggestive material for varied forms of composition.

The reading was of three sorts: exposition, description, and folk literature. The first kind included such books as government reports and selected parts of *American History and Its Geographic Conditions* (Semple), and *Our Slavic Fellow-Citizens* (Balch). The second kind included certain magazine articles and vivid, true, descriptive books (by Riis, Steiner, Antin, and others). The third type of reading, which I suppose would qualify more surely as "literature," started out with folk poems and stories of the nations some of whose people are rapidly becoming Americans: Irish fairy tales, Russian and Norse legends, *The Bard of the Dimbovitza* (Roumanian) and a few others; this was followed by reading decided upon entirely by the teachers, with only the mild approval of the pupils, who urged more "modern stuff." It consisted of a rather thorough study of English and Scotch ballads, and the reading by each child of one of the longer epics—the *Odyssey*, the *Iliad*, *Beowulf*, the *Song of Roland*, or *Morris'*

Sigurd the Volsung. Some of the written work was based on this reading. There was a good deal of discussion—initiated by the pupils, whose interest had somehow revived—about folk literature and its place in the life of a people.

We have found that the chief dangers of this type of course are that the children may become content with superficiality, may think they know what they do not know, may be unable to organize scattered units in their minds, or may in some other way struggle with the discouragement of tackling work far beyond their capacity. We tried to meet these dangers by selecting a few significant units from the mass of material, and by insisting upon thorough, accurate studying. Although the main course of action had to be determined from week to week by the teachers, we tried to keep it from becoming rigid or alien to the interests of the group, by following up the problems which arose in their minds as well as the ones that occurred to us as interesting.

I realize that it would be difficult to attempt a piece of work of this sort unless certain conditions favored freedom of experiment, but I believe that teachers everywhere should work toward obtaining conditions that make possible a certain amount of freedom and adaptation of their work to special needs. The only "outside" requirements which we had to meet were those for college entrance, which we covered in the course without too great a deviation from our special lines of interest. Our schedule was the usual unbending high school schedule, but occasional study periods were used for group work. There were two sections of the class, one numbering fifteen and the other twenty-two pupils. Each section was sometimes divided into groups of four or five members to do a special piece of work for the class. Sometimes these groups met with the teacher; sometimes they worked independently. At times the teacher met only with the chairman of the groups, giving them suggestions for directing the work of the groups. The groups met anywhere and everywhere: in vacant rooms, which could rarely be found; in the hall; or on the landing, when no other space was available. Sometimes a group was formed by the teacher on the basis of special needs, for extra training in outlining or organizing a report or reviewing a difficult subject. Frequent individual conferences helped to achieve good workmanship, to clear cloudy understanding, to start fresh interest. In fact, without the opportunity of doing a certain amount of work with individuals and small groups, it seems

to me difficult to maintain in any group of pupils a sturdy vitality and independence of thought and a sense of thoroughness and fineness of technique.

Always we tried to make it possible for the people in the class to see for themselves the life lived by human beings, rather than to memorize abstract conclusions. We tried to make it possible for them to realize some of the actual relations between actual human beings and their government, to gain a greater understanding of the many peoples who all together make up present-day America, to become aware of the legend and literature that have grown out of the life of nations in the making, to realize the necessity of a sound basis for judgment and of good workmanship in thinking, and to begin to form a point of view about community problems which will help them to become intelligent citizens.

Perhaps the most immediate reason for the existence of a course of this sort--and its inherent values are latent also in much of the unrealized material of history and daily experience and literature--is the arrangement of the average high school curriculum. At the age of fourteen, when ideals form and change rapidly, many school children--at least those who are working toward college--are spending the greater part of their time in studying subjects which offer "mental discipline," the training of memory, abstract logic, and individual skill, rather than social understanding. Work in foreign languages seems to be at this stage largely a technical matter of grammar and vocabulary. This, with the required mathematics, consumes about two-thirds of the children's study time. Until this condition be changed, is it not imperative that the remaining one-third shall be full of rich content which will expand the horizon of human experience and quicken the imagination?



Coronado, and Pizarro, on the one hand, with their hundreds of armed men going forth to conquer and exact tribute, and on the other hand the little band of seven Frenchmen in two bark canoes, with prayer-book and calumet, welcomed and feasted by their savage friends from Green Bay to the Arkansas. The former fought their way and left desolation and hatred in their track. The gentle and devoted Father Marquette was safer than if he had had an army of ten thousand to accompany him through the wilderness of savage Indians. Yet the innocence and self-sacrifice of Fray Padilla ended in his martyrdom. La Salle dreamed of a great French Mississippi Valley that would have made France paramount in North America. While Columbus had innumerable followers who have worked out his ideas in a great variety of ways for centuries, La Salle's aims were abandoned by the French, and the dream never came true.

The character of Captain John Smith shows many analogies and correspondences with that of Roosevelt. Both were pre-eminently men of action, who could get things done, whose careers show startling instances of good luck or happy coincidences because they were always ready to respond when fortune offered. They both roamed the wide world in search of adventure. They were always dominant wherever they were. They turned misfortune very frequently into great good fortune. They are both heroes whose names will always sound stirring to the boys and girls of school age.

What is it in a leader that commands the loyalty of his followers? The children, from their standpoint, have answered this question in part. It is bravery, unselfishness, kindness, and sympathy; it is firmness, sincerity, and perseverance. The leader must be able to get things done; he must be resourceful and self-confident, must have commanding presence and personal magnetism. He must be able to decide promptly and justly, and not waver. Some of the leaders had bosom friends who doubled their effectiveness. Thus La Salle was aided by Tonti. Magellan was able to do much more, because of his team work with Francisco Serrano. Roosevelt and Taft for a time were such congenial spirits that both did more together than they could accomplish when separated. Lenin and Trotsky at present owe much of their success to the fact that they supplement each other in their abilities.

of ideals that may become the controlling motives of later life. Many a pupil is stirred to the adoption of ideas and purposes by "the Vision of the world and all the wonder that would be." He passes in review great aims, dynamic ideas, and worthy but still unachieved purposes. There is born in him a lasting resolve to devote his life to the accomplishment of some good and worthy aim. Such an influence possesses enduring effect. To choose, for study, character types of pregnant power is a great problem of the curriculum. Certain men realize great developing ideas, and their deeds illustrate such aims. Columbus' idea of sailing west to reach the east was one of the most fruitful that we find in all the range of history. Captain Cook laid the foundation of the great British Empire, in Australasia.

By comparison we see resemblances in the midst of striking contrasts. Nothing is more suggestive of new ideas than comparison of situations, in order both to see wherein there are resemblances and also to note the differences. To train judgment it is necessary to compare events and purposes, noting carefully their resemblances and differences. Children reflect opinions of the teacher, but they nevertheless put much originality into their own opinions, for it is often easier to be original and inconsistent than to apply any abstract principles consistently. I do not know of anything more interesting to young or old than these comparisons that illumine history and make it possible to understand one age or event by its likeness to another. History does repeat itself in never-ending variations.

The explorations and discoveries are part of the effort of the human race to study the great world. The interest and the value of these great adventures for us today lie, not in treating them as isolated facts of history, but in studying them in their relations. Columbus' work cannot be properly understood without learning something of Marco Polo's and Magellan's. While Washington and Lincoln were to me supermen, to whom I did not apply the standards of right and wrong, they had little influence with me. It was the contrast of Napoleon with Washington, the comparison of Roosevelt with Lincoln, that made all four human and intelligible as well as full of interest. Marquette never used to interest me much, so long as his exploration of the Mississippi was the chief fact I knew. Interest grew from the contrast between the expeditions of De Soto, Cortez,

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This is the way fifth-grade children express their judgment of the qualities needed in a leader:

A leader must be brave, smart, original, and have command over his men. A.

A leader should be brave and wise. B.

A leader must be kind to his men. He must be able to make his men obey him. He must have experience to fill his position well. P.

A leader should be true to his men, and the men should be true to him. P.

A leader should be kind and helpful to his followers. He should be brave, unselfish, clear-headed, and thoughtful. F.

A leader should be determined and not harsh to his or her followers. M.

A leader must have common sense, bravery, responsibility, wisdom, and kindness. M.

A captain has to have initiative. H.

A man that is a leader, I think, should be brave, kind, unselfish, and honest. L.

I would choose a man or woman who is brave, kind, and willing to risk his life for another, as my leader. F.

A leader should have these qualities: bravery, courage, power to make those under him obey him, to be strict and have determination. A.

Very few emphasize the moral rightness of the leader's aim as important:

The qualities a leader should have are to be brave and honest, to be willing to suffer for his men, always do the right so that his men will follow him. E.

If I were to choose my leader I would choose a man that would not think of himself, but would see to do good for his followers; a man that is honest and brave and would stand for the truth and be educated. E.

Some of the children named other children whom they would choose to follow and gave their reasons:

Of the children in my class I would rather have F. W. for my leader, because he is wise and would not lead me into any place that was not worth going to. I would like an honest leader, and he is honest. J.

I look forward to J. T., because I think he is kind, helpful, brave, unselfish, clear-headed and thoughtful. F.

Out of all the class I think B. would be the best leader because he is strong, brave, smart, and has control over his men. A.

Here are a few answers to the question: Whom do you delight to honor?

I admire Father Marquette because he was not selfish and because he did not go down the Mississippi to see if it ran into the Pacific for his own good, but for France. He did not go down the river only to explore but to teach the Indians of God. E.

De Soto was mean to the Indians, so that they did not like him, while the Indians loved Father Marquette. E.

The reason I like Father Marquette is because he gave up his personal life and went through daring trips to teach the Indians. H.

Ex-President Roosevelt is the man I most admire. Whatever he started to do he always finished. M.

I admire Roosevelt for his courage, bravery, and ability to accomplish what he started out to do. A.

I like Roosevelt because he had much courage and was fearless and brave. L.

Even children of ten judge with decision when their minds are clear on the facts. It is necessary, therefore, to dwell long enough on the type studied in order really to appreciate it concretely. This may take weeks or even months, working with one great character. Generalizations get us nowhere. Most text books, however, contain only conclusions or general statements that represent the adult product of thinking. The children, on the other hand, need the concrete life-experiences to compare and pass judgment upon, in order to think. It takes longer than to memorize the statements that others make about the hero; but that which is to count in building character must reach the emotions and stir the will to action.

Since most of us must be followers, we should recognize the necessary virtues of the common man, who is not a leader at all. The qualities that the followers should have, some children stated thus:

A person who is to be led must be obedient, brave, and steadfast. M.

A leader's men should not be fighting among themselves. B.

A captain has to have initiative. The sailors have to be faithful, and they must want the voyage to be a success. E.

If a leader wants to have success he has to be honest and brave, and his men should be of the same character. L.

The qualities that good followers should have are braveness, faithfulness, and obdientness. A.

Would the practical application of such ideas as these children express purify our sordid politics and make for good citizenship? Of course it is a long way from the expression of an idea to its carrying out. The worst feature of our community life is that we do not live up to the light that we have. On the other hand, if we start the children to thinking genuinely and judging frankly, we may sometime arrive at the actual realization of

SUGGESTIONS FOR ALLEGORIES ABOUT LINCOLN

The North and South as a chain; this chain broken by slavery; the chainsmith, Lincoln, welding the chain together; the things that hindered him, such as a poor fire, bad tools, etc. W.

We might call it a ship, tossed on the seas, and have barnacles represent the slaves, who are gluing themselves to the ship and gradually sinking it, and have Lincoln be the captain, who is arranging everything. Or, have a boy who is heir to the throne be in some way deprived of it and later, through his intellect, win the hearts of the people and regain the throne. Or, we might have Lincoln represented by a stag, which is chased by the hounds, and who waits until the right time and then gores the hounds and at last becomes the monarch of the forest. J.

A man, Lincoln, should be working on a bridge, and every little while he would encounter some difficulty. Finally, as he finished it, he would slip and fall, killing himself but leaving the bridge almost complete. J.

Columbia is striving to keep from catching the sickness, slavery. A group of doctors, representing the Ordinance of 1787, Missouri Compromise, etc., come in. But finally the doctors fail, and they find that her left arm, the South, will have to be cut off. Then comes Lincoln and saves Columbia. H.

We might picture Lincoln as a gardener, watering and taking care of a beautiful flower, the flower of liberty, and picture these different ordinances and compromises as weeds or snakes or other things which try to kill the flower. I.

We might have Lincoln a scale-maker. One side would weigh more than the other, one side Liberty, the other War. M.

We could have a young man, representing America, struggling to gain a certain point and going through many experiences. At last he sees a shining light, representing Lincoln, who guided the young man and gave him power and strength to carry on his work and find the right way. This would show what Lincoln had done to help his country. P.

LINCOLN—AN ALLEGORY

A certain man had a great estate. And always he kept a steward over the estate to tend the gardens, to care for the harvests, to plant orchards and shade trees, to welcome all who came.

And there came a day when he must choose a new steward. And he bethought himself of all the learned men and they came unto him. Many mighty men came, and he was sorely troubled, not knowing whom to choose. And there came also, out of the wilderness, a simple man in rough garments, who had great endurance, who was patient as he was simple, loving as he was strong, hopeful as he was humble. So the master, though doubtful, decided to make trial of the tall, hard-muscled, melancholy man, and send the others away. "It does not give me so much pleasure as I expected," said the new steward, "but do not send the others away. Though they love me not, they shall be my helpers."

curriculum in aiding a teacher to do her best for her pupils is freedom from departmental work. Another great advantage is a flexible daily program. If Robert's first remark when school opens is, "It's only a little more than a week to Lincoln's birthday, and we haven't even talked about what our exercise shall be," the teacher can say, "Very well, what's your idea?" And if he has been very much impressed by the study of *Pilgrim's Progress* and thinks we ought to write an allegory, we can all make suggestions for allegories, as the class did in 1916, choose one of them, and go to work upon it. The subject in which the interest is keenest, the thing for which the need is greatest, the material which has a right to the freshest attention, determines what shall begin the day. The teacher with the three advantages, a flexible curriculum, a flexible program, and a single group of pupils whose entire work she teaches, or supervises, is much to blame if she cannot aid her pupils in their moral development. I have spoken of giving them a basis for moral judgments. She should also be able to arouse and increase that courage for hard work, for drudgery, if you will, that is essential to usefulness in society. This is achieved more easily when the social motive for work is strong—as it is in planning an exercise for the school on Lincoln,—and when the subject is stimulating to the warmest hero worship and the finest love for humanity. Under such a stimulus, lazy, self-indulgent Jack will work two or three hours, after reading Vachel Lindsay's "Abraham Lincoln Walks at Midnight," trying to write a poem of his own which will say that Lincoln may sleep, for America will carry on his work. The teacher should be able to awaken pride in good work without any false stimuli; habits of regular work; habits of intensive study and scorn of dawdling. The morning exercises which follow are evidence, perhaps, of hard work, willing work, and some power of moral judgment.

I.

The eighth grade of 1916 chose to write an allegory, because *Pilgrim's Progress* had especially interested them. They each made one or more suggestions, of which a few follow. Of these we chose one, and the class worked it out together.

up the tree, he struck mightily at the dangerous limb. Now that he had a chance to hit it, he hit it hard. Under the skilful strokes of his powerful ax, the branch fell.

And though the gray form of treachery crept up behind, and brought death to the fearless steward, yet will the master ever hold him The First American.

II.

The eighth grade of 1917 had had a good deal of discussion on the question whether an American should pity Lincoln. They had each made a short oration to the class on some aspect of this matter. When they came to plan their exercise for the school, they recalled the best of these orations and combined them. Then they agreed to write an introductory paragraph based on Stanton's words at Lincoln's death bed, "Now he belongs to the ages." Every one did his best on this paragraph, and we collaborated. We followed the same plan for the concluding paragraph; the result was that, while only four people spoke, all the class had aided in the composition and considered the exercise a piece of class work. The same is true of the other exercises.

LINCOLN

Song: TRUE FREEDOM.....LOWELL
Eleanor.

All the long night after Booth's hateful bullet had crashed into Lincoln's brain, men stood about the bed, grief-stricken and amazed. As the last feeble pulse-beat ceased and the great soul started on its journey, Stanton whispered, "Now he belongs to the ages."

Not to the West, whence he came, belongs this rail-splitter; it is not for the North to claim him, though he guided them through four years of dreadful war—no, not even the Union, which he loved more than life itself, can say, "He is ours," for Lincoln belongs to the whole world, a gentle, simple, great, kindly man of the people. Travelers tell of seeing his picture in the huts of Russian peasants. There must be some reason why this man, more than any other American, belongs to the ages,—why he is claimed by the simple people of the whole world.

Frances.

The Gettysburg Speech perhaps helps us to the reason. We love it and learn it, not because of its beauty, its compact unity, not even because of the wonderful skill which put into a three minute speech the meaning of the whole great struggle; not for these reasons chiefly, but because these words could have come from one man only.

What gave him this power? We are wont to speak pityingly of Lincoln's childhood and early surroundings. But in that quiet forest while with mighty swing and sure stroke he cleft the rail, or with hoe and scythe aided

Thereafter, whosoever traveled to this great estate saw standing within the gate a man of tall stature, gaunt, strong, with great hands which bore the mark of toil. Those that passed were wont to laugh and throw him taunts, but he heeded them not. He felt no pride in his high position, but with malice toward none strove to do well the great task before him.

Upon a day came a curious visitor, inquiring about a great tree upon which the steward was earnestly gazing. "Why," said he, "do you fix your gaze upon that one tree? The estate is great. There are fair flowers and pleasant lawns and many stately trees. Why is this one tree your chief care? And why is your gaze sad and anxious when you look upon it?"

The steward turned his care-lined face to the questioner. Then his eyes lit with a quaint humor. He struck the tree a loving blow with his great hand. "Old tree," he said, "why do I love thee?" Then turning to the questioner, he said, "My friend, fourscore and seven years ago our fathers planted that tree, that we, the people of this garden, might secure the blessings of liberty. It has withstood storms and the mighty power of the wind; when yet a tender shoot a great fire scorched it; here worms have eaten it; there lightning has struck it. It bears scars, bad scars, and deep seams. Yonder limb weights it dreadfully. But my honor defends its life. If that tree of liberty die, all else on the master's estate will be worthless. Without the assistance of the Divine Being it cannot survive; with that assistance it cannot die."

Often the master walked about, proudly inspecting his broad acres. And often the steward spoke with him anxiously concerning the tree. "This limb will be a great menace to its life in time of storm. A tree so divided cannot stand."

But the master said, "Stay, touch it not. Would that it had been pruned off while it was yet small. But now the branch is almost as large as the tree itself. If it were lopped off, I fear decay and death."

So the steward answered patiently, "Often a limb is amputated to save a life. But a life is never given wisely to save a limb. If that branch is not dangerous, nothing is dangerous. A bolt from the sky would split the tree from top to bottom. Even now in the west the sky is darkening, the clouds are low, and a storm must come."

And the storm came. The windows of heaven were opened, and the rain poured forth, and the terrible lightning and thunder were released. The owner became sorely frightened, and rushed to the steward, and was very wroth with him, and gave harsh orders, and upbraided him. But while the owner in terror raged, the steward's face was calm, though sad. With steady eyes he stepped firmly to the aid of his friend the tree.

In the fury and wildness of the tempest, the tree shook wildly. The owner kept shouting, but the steward heard him not. He knew the danger and stood face to face with the storm. A flash of lightning illumined the strong determined face, and the great man stood in the wild wind. By the blinding glare he saw more clearly that the limb must fall. "It is dangerous," he said, "but we must get at that branch; we must strike it off, or the whole tree will go." Amidst the fearful hurricane he pulled himself laboriously

up the tree, he struck mightily at the dangerous limb. Now that he had a chance to hit it, he hit it hard. Under the skilful strokes of his powerful ax, the branch fell.

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his father to gain bread in the wilderness, there was time for great thoughts to grow and ripen. Can we doubt that forest and field helped to fit him for the great task lying before him? Can we doubt that this hard labor gave him respect for labor, made him unwilling that the toil of any man, black or white, should be unrequited? No one was so earnest in his resolve "that a government of the people, by the people, for the people, should not perish from the earth." Can we pity him for surroundings that gave him such sympathy with the common man? "I am not ashamed to confess that 25 years ago I was a hired laborer, mauling rails, at work on a flat boat—just what might happen to any poor man's son. I want every man to have a chance to better his condition." Lincoln believed that all men are created equal; that the poor, uneducated, hard-toiling slave had a right to a chance to better his condition. He himself had labored hard and his sympathy went out to labor, and he felt as not many others did that the slave should be free. He trusted the people with whom he had lived and labored. "None," he says, "are more worthy to be trusted than those who toil up from poverty—none less inclined to take or touch aught which they have not earned." He believed that the people can rule and must rule. He says, "Why should there not be a patient confidence in the ultimate justice of the peoples? Is there any better or equal hope in the world?" The Gettysburg Speech shows us that because of this noble democracy, this belief in the people, Lincoln belongs to the ages!

Samantha.

Gettysburg Speech.

Fred.

Lincoln's childhood, was that unfortunate? Surely the trip across the broad Ohio and into the Indian wilderness was a joy. The outdoor life was not a misfortune. And we cannot forget that the move from Kentucky to Indiana was a move from a slave state to the northwest territory where neither slavery nor involuntary servitude could ever exist; where the free man could overcome poverty by honest labor. When Lincoln quotes "All men are created equal," what does it mean? It means that where he grew into manhood all men were equal. No master said his servants were of a lower race than himself. That sturdy childhood taught the boy that all men are created equal. Was a childhood that could teach such a great lesson wholly unfortunate?

Looking at many another boy we might say, "How unfortunate! Books so easy to get and so many! Schools and teachers so numerous! Money so plentiful! Excitement so constant! Everything so easy to get except ambition! Who is most fortunate?"

We have said that we can scarcely think Lincoln unfortunate in his surroundings. His surroundings were there not to hinder but to help him. Behind each blow of his axe was the great determination to make good. And it was this determination to make good that at length kept the Union together and set the slaves free.

Shall we say that his education was unfortunate when his hard struggle taught him to be self-reliant? What is education? Lincoln grew up among

people who were poor, uneducated, and unwilling to learn. But he was different. Everything educated him. Close contact with his rough neighbors taught him to understand human nature. Can the boy who for twenty miles around his home had trudged in search of books remain uneducated? Lincoln was poor in material things but rich in ambition. Ambition taught him never to be content with what he had learned, but always to strive to learn more. That is education.

Shall we say that he was homely—that in appearance at least he was unfortunate? Not so. Looking at his picture your heart seems to go out toward him. Well known artists say that his face had all the lines of beauty. It had all the lines of kindness also.

Arthur.

What Lincoln gained he gained by struggle. Cold, hungry, in a wretched backwoods cabin, Lincoln cast these hardships aside. But though he cast them aside for the moment, the struggle made a mark upon him, and when he left behind the forest and the cabin, he took with him the power they gave him.

We admire Lincoln for his courage, putting before the people, at the risk of political disaster, such a speech as, "A house divided against itself cannot stand; I believe this nation cannot endure permanently half slave and half free." We admire his modesty: "The world will little note nor long remember what we say here" are words the world will never forget. We admire his perseverance, his honesty, his sincerity, his simplicity. What other man ever rose through every class, from the lowest to the highest, without a thought of his own glory? But above all, in this time of world war, we admire him for his fairness, his sense of justice. In his second inaugural address, he blamed both the North and South—the South for its persistence in holding slaves; the North for its delay in driving slaves out of the land. He seemed to be far above the ordinary routine of life. He looked down on both sides, and he judged fairly. "Both read the same Bible," he said, "and pray to the same God."

III.

The play which follows, *The Liberator*, was written by the eighth grade of 1915, at the request of the Printing Department, to illustrate the power of the press. Its composition took a long time, and was possible only because of the background the class had gained in six weeks' earnest work on Lincoln's life and times. The eighth grade of 1918 chose to repeat it for the Lincoln Exercise.

THE LIBERATOR

SCENE I.

(A STREET IN BOSTON—1850. A BOY SELLING PAPERS.)

Hopkins. Here, boy, give me a paper. I said a paper, not the *Liberator*!

Tim. Here you are. Thank you, sir. Paper? Papers! *Courier*,

Transcript. News! Papers!

Hezekiah Jenkins (*hesitating before stand*). What papers are you selling, son?

Tim. *Liberator*, sir, *Transcript*.

McCarthy. Here, boy, give this gentleman a real paper. Give him a *Courier*.

Bradley. Don't you do it, Tim. Hand out the *Liberator*.

Tim. Yes, sir. Only have a few more left.

Hezekiah Jenkins. Who is the publisher of this *Liberator*?

McCarthy. A fellow named Garrison, a raving maniac on the subject of slavery. All day he sits in a dirty little hole that he calls the office of the *Liberator*, and sets up his worn-out old type. There aren't two men in Boston who wouldn't pull a rope to stretch his neck.

Bradley. It's false! There aren't two other men in the country who could persevere under the public ridicule Garrison gets. (*Picks up Liberator.*) All these twenty years Garrison himself has been a slave. He is the kind of man that ought to be appreciated and loved, but he is hated and shunned. Look at the motto of the *Liberator*, "Our Country is the World; Our Countrymen are Mankind."

Mr. Thomas. You are right. Garrison is striving for a goal so far beyond common men we can't see its glory. He's above the mock of men; he sees before him a perfect land of freedom, and he strives toward it, though we all pull back. It is not for nothing that he works day after day to get out the *Liberator*. Every free man in America is suffering with the slaves, while human beings are being held by their brothers as if they were dogs.

Hopkins. Dogs? Garrison is a hound. He is ruining this country for the sake of a few ignorant blacks. Is that justice? The slave may deserve freedom, but the welfare of our country comes first. He is doing this only to make money—money!

Thomas. Ruining our country, indeed! Mr. Garrison is ruining himself. Though he has not a cent, he stands for the right. Though thousands are against him, he fights on. How long will civilized countries trade with a free country that sells men like dogs? It is the will of God that the slaves be free. Garrison is God's messenger.

Wilson. Who is this Garrison?

James. Who is he? He's the man who is stirring up the country. He's the man that is making the North hate the South and the South hate the North. He's the man that's spoiling business and splitting parties. And why is he doing it? Because he thinks that our constitution is a covenant with hell. And so he runs this crazy paper and makes his living by trying to cheat southern gentlemen of their maintenance. Yes, who's Garrison? He's a rat, a dirty rat, and he chooses that way of making his living.

Bradley. Look here. You can say all you like against Garrison's cause, that's *your* privilege, but you can't attack his character. Garrison's open and above-board; he's working heart and soul for the blacks, and when the time comes he'll free them.

McCarthy. So we have part of the underground railway corporation here?

Bradley. Yes, sir, you have. If you keep us from doing the right above the ground, we'll do it underground.

Hczekiah Jenkins (to Citizen). Are you for the niggers, too, sir?

W'ilson. Sir, I am for anything that helps our country to improve and progress, but I do not think that stirring up hatred within her boundaries will help to preserve her from the hatred that is ever without. Therefore, I say, let the slaves be slaves if it helps our country. In no time at all the slavery question has gone from bad to worse. We were a prosperous, peaceful country. We are now divided into two factions, each hating the other, each jealous of the other.

Bradley. And do you think that it does help our country to have these poor wretches toiling in bondage, making the working whites despised and the gentlemen useless snobs? Do you think it is worthy of our country to pose as free and hold human beings in cruel bondage?

McCarthy. And if the nigger was free, what would he do but hinder the country, ruin the white laborer who will not work for low wages? And what kind of citizen will he make?

Tim. Same kind you've taught him to make.

Bradley. Righto! This thing has got to come sometime.

Webster. But I say it doesn't have to come.

McCarthy. It'll dissolve the country if it does.

Thomas. It will unite the country if it does. Our country at the present time is at a grave crisis, brother is turning against brother, family is turning against family, and the cause is simply this, that there are a few people, too many, who think that they are better than others who are of a different race. Is it possible that in this century a man is beaten like a hound? Is it possible to conceive the pain and agony of that cutting, biting rawhide whip? The day will come, and come soon, when the question will be decided. God help the right.

Hczekiah Jenkins. How does Mr. Garrison dare print this paper when he has so many bitter enemies?

Stickney. Why should he be afraid of any man living? This is a free country. We stand for free religion, free speech, a free press.

Thomas. Ay, and free men. Nothing in this world or the next could dissuade Garrison from publishing this paper and preaching freedom. He is constant in purpose, though in danger of his life. Believe me, Garrison's name will ring down the ages. He and his paper cannot perish.

Baker. Here, boy, a *Courier*.

Anthony. I'd like to choke Garrison to death and dump his press into the river. Here, boy, I'll give you twice what you make if you will quit handing out that *Liberator* all the time.

Tim. It's a mighty fine little sheet. Sells pretty good. Extra! Extra! All about the gold in California. *Transcript, Courier!*

Phillips. Have you a *Liberator*, boy?

Tim. Sure, and I'm one myself. Here you are. Anything else, sir?

Transcript, Courier, all about the gold in California! Extra!

Anthony. Transcript, please.

Tim. Say, Mr. Anthony, they say a fellow out in California dug up thirty thousands dollars with his pen knife. But I bet you could do it with your tongue. (*Enter Quaker woman.*) Want a paper, ma'am?

Mrs. Penn. Yes, Tim.

Tim. Lots of news today. All about the gold in California. Are you thinkin' of goin' out there, ma'am?

Mrs. Penn. Ay, Tim, I'd gladly go, if it would help to make California a free state. We call this a free country, Tim, but does'thee think it is so when half of our states have slaves?

Tim. I don't, ma'am. You haven't told me what paper 'tis you're wantin'. But, sure, I don't need to ask. Here is the latest edition of the *Liberator*. Thank you, ma'am. Gold, gold in California. Extra paper!

Sherman. What papers, Tim?

Tim (winking at crowd). *Liberator*, sir. *Trans—*

Sherman. *Liberator*, the Devil!

Tim. *Liberator! Transcript!*

Sherman. Don't say *Liberator* to me again.

Tim. Huh! It's a paper that takes brains to run.

Sherman. Oh, brains! The editor's a very intelligent man. Making heaps of money out of it, too.

Stickney. This paper makes me feel more every week that we are hampering our race, as well as the blacks, by slavery.

Phillips. Yes, and the longer we keep them slaves, the less able they are to be free.

Sherman. These radicals divide the country and make each side hate the other. Why, their howling has already lost a thousand votes for our party. A nice paper to be sold in the streets of Boston!

Tim. Sure, people come and buy a paper, and the first thing I know they come back and throw it in my face. Then I sell it again.

Webster. The slaves are personal property, such as no man has a right to take away. Garrison is like a fire on a great prairie. He must be stopped without delay, or we shall see the nation in a blaze.

Phillips. Every word that that man writes is true. This is supposed to be a free country, but do you suppose we can make it so when almost one-third of our population is in bondage?

Wilson. I believe in gradual emancipation. Set the young negroes free and educate them. But do you think it will help our country to free all these old ignorant blacks?

Sherman. This paper has been going on for nearly twenty years. Must we tolerate this disgrace to Boston? I stand for the good of Boston—for the good of its citizens. I say this paper is a disgrace.

Webster. The other day a man from St. Louis came to see me. He jeered, "How is your little comic paper, the *Liberator*?" In St. Louis, when we mention Boston, we always get a laugh." Shall this be said of our Boston? We ought to take his press and pull it up by a pulley, put him under, and

let the rope go.

McCarthy. Let's ask Mr. Anthony what he thinks. Mr. Anthony is candidate for Congress from our district. We ought to know his view.

Hopkins, Hanson and Others. Speech, speech, Anthony!

Anthony. You wish me to speak to you?

Crowd. Yes. Speech, speech!

Anthony. Fellow citizens, I have nothing to say to you. There is nothing to be said on this subject. You feel that—

Webster. The slaves are property.

Stickney. The slaves are human beings.

Wilson. Our country comes first.

Anthony. And I feel the same. I say the thing speaks for itself. It is not only the question of slavery that confronts us, it is not only the question of the welfare of Boston, but it is the question of the safety of our country. Here is this man Garrison, stirring up hatred, striving to separate our people, to weaken our defenses against foreign nations. What is there to be said about this?

Mob. Nothing! Do something! Stop him!

Anthony. Those negroes will work for low wages, starvation wages.

Laborer. Down with the niggers!

Anthony. If the South is on hostile terms with us they will not trade with us.

Merchant. Down with the niggers!

Anthony. If they are estranged from us, they will send their cotton to England.

Manufacturer. Down with the niggers!

Anthony. And the North itself will be turbulent. We shall not have unity of feeling.

Politician. Down with the niggers!

Laborer. Down with the *Liberator*! It will ruin us.

Anthony. Look at our country? Peaceful and progressing rapidly. What will happen when all those niggers are let loose? What will happen when we are divided in two, when our trade is divided, when our laborers and their families are starving? Men of Boston, you know Garrison; you know the *Liberator*. But I am thinking of the merchant; I am thinking of the laborer. If Garrison has his way, there will be war. I need not, I trust, remind you of our hard struggle for liberty and how our fathers framed the constitution. This man Garrison tore up the constitution because it did not abolish slavery. He is the man that is going to bring a great war on America. Every man that would have the country live, stop and think. Let the South refuse to trade with us, and what will that mean? It will mean bankruptcy, strikes, public disgrace. Garrison's work will make trouble with the South.

Crowd. Down with Garrison!

Anthony. Fellow citizens, do you love your country?

Crowd. Yes, yes!

Anthony. You all shout "Yes," but Garrison is against his country, our

country.

Crowd. Let's mob him.

Anthony. It's a disgrace to Boston. Every loyal citizen should think so. Garrison may mean well, but is Boston, is our country, to be ruined by well-meaning lunatics? Shall we put up with slander against President, constitution, country, because there is a madman in the town?

McCarthy. He is not mad. He's as cool-headed as we are.

Anthony. Not mad, do you say? Could any man in his senses wish to destroy his country, to weaken her so that European powers can seize her? The legislature of Georgia has offered a reward of \$5,000 to any one who will kidnap Garrison and bring him to that state for trial. Citizens of Boston, shall we tolerate such a man in our city? It disgraces us and the whole North. Slavery is an old and established institution. Why should we disturb it? The editor of the *Liberator* is a coward and an enemy to men. If the slaves are freed, who will do the work—who can do the work? Will it be done? No.

Wilson. That's true. It sounds right.

Bradley. Right? No, it's wrong. It is all a lie.

Anthony. Boys, there are a good many abolitionists in this town, but the worst is Garrison. He is stirring up the town to a dreadful riot. Oh, if I were but an orator I would rouse you to such a rage that you would—

James. We will. Let's mob him. Let's put a halter round his neck and drag him through the streets and show him to the people and say, "Here is the savior of the slaves!"

Anthony. Stay, boys, don't be rash. This *Liberator* is a fairly good looking paper, and Mr. Garrison has to make a living. Suppose it does say that the slaves should be free, and should vote, and that the slaves are human beings and are equal to us.

James. Let's throw his press into the river.

Hopkins. Yes, and see if any of these wonderful black pets of his will heave it out for him.

Wilson. This means murder. Run, Tim, tell Garrison to escape.

Tim. Escape! He'll come right down among them, if he hears there's danger.

Anthong (catching up a pack of "Liberators"). This—this it is that is trying to lead the whites to destruction!

Citizen (striking a match). I say, burn it.

Second Citizen. Yes, burn the Devil's Bible.

Other Citizen. Ay, mob him, tear him to pieces, destroy his press!

Anthony. Friends, why be violent? When you are called to answer for your acts, do not say "Anthony has done this," for I do solemnly advise you, urge you, pray you not to commit an act of violence.

Citizen. 'Tis our duty. Burn the *Liberator*!

Tim. Holy Mother, he has heard them. Here's Mr. Garrison now. (To Wilson). Run! Down Lane! (To mob). He's escaping. (To Stickney and Bradley). You can save him. Lead the mob. Drag him to the city hall.

(Mob is led astray for a moment by Wilson running.)

Shouts. Grab him! Quick!

Tim. Here's a rope!

Bradley. Good, Tim, I'll do it. *(Seizes rope.) (Enter Garrison.)*

Anthony. You fools, not Lane Street. Here is Garrison.

Stickney. Quick! Quick! *(Stickney and Bradley head mob which seizes Garrison.)*

Garrison. Stop! Let me speak to them! *(They drag him off.)*

Mob. After him! Kill him!

(Tim and Anthony alone.)

Tim. Say, Mr. Anthony, why don't you go on and finish your dirty work, instead of trying to sneak away like a coward?

Anthony. Look here, you little skulking vagabond, I'll not stand for this much longer.

Wilson (re-entering). Look here, you big, skulking coward! I know things that have passed here that would not help you to get to Congress.

Bradley (re-entering). Garrison is safe. Your scheme saved him, Tim. His friends led the mob, right into the arms of the police.

SCENE II.

(PRINTING OFFICE—SEPTEMBER, 1862. GARRISON SETTING TYPE. BRADLEY AND MRS. GARRISON IN OFFICE.)

Garrison. War, war! Nothing else but this bloody, terrible war. Now a new battle is being fought, now more blood is being shed. And the worst of it is that all this might have been settled in a peaceful, civilized way instead of by a cruel and merciless war. The selfishness and hardness of men's hearts is at the root of it all, making this war the bloodiest in all history. Civilized men today are worse than savages.

Stickney. But look at our great men. Think of Lincoln—

Garrison. Lincoln is the worst of them all. He is well called the slave hound of Illinois. I am busy now setting up an editorial denouncing Lincoln for not proclaiming unconditional, immediate emancipation. I am aware that many object to the severity of my language, but is there not a cause for severity? I will be as harsh as truth and as uncompromising as justice. I do not wish to think or speak or write with moderation. No! No! Tell a man whose house is on fire to give a moderate alarm. Tell the mother to gradually extricate her babe from the fire into which it has fallen, but urge me not to use moderation in a cause like the present. I am in earnest. I will not equivocate. I will not excuse. I will not retreat a single inch, and I will be heard.

Stickney. You are wrong about Lincoln, Garrison. It has been your life work to free the slaves; but the burden of the nation at this terrible crisis has been upon his shoulders. He is the only man that God ever made who could steer the ship as he has steered it.

Garrison. I cannot hope for much from that man.

Stickney. Well, emancipation has to come sometime, and when it does we shall have you to thank. Fourteen years ago you were in peril of your

life. Now you hold public opinion in the hollow of your hand. You have slaved for the slave for thirty years.

Garrison. And if the slave is freed, I shall count that labor requited. How can any man who has the power to free the slave forbear?

Stickney. Lincoln's object is to save the Union. And it is beginning to look as if he were going to do it.

(Enter mail carrier. Mrs. G. sorts mail.)

Mrs. Garrison. Do you remember, Mr. Stickney, when his mail consisted mostly of threats against his life? Now it is full of complimentary and congratulatory letters, and we have new subscribers in every mail.

Stickney. Yes, a great change has come over the people in the past thirty years. You used to be mobbed and hated. Now you are respected and loved.

Garrison. I always believed that sooner or later people would begin to think more seriously about what I was saying.

Mrs. Garrison. Where is the subscription book, William?

Stickney. You'll have to buy some new type, I think. The issue is so large now, and so many people read it, that you ought not to use this worn-out old stuff. You deserve a lot of credit, Mr. Garrison, and your time is coming soon. This civil war is going to change something. It will end in victory for the North. It's comin' yet, for a' that, and every slave will be free.

Garrison. God grant it. When that happens my work is finished.

(Enter Hezekiah Jenkins.)

Hezekiah. May I shake hands with you, Mr. Garrison? I've been reading the *Liberator* fourteen years. I bought my first one that day the broad-cloth mob nearly ended you and your newspaper career. My last one, too, it would have been, had it not been for a sharp little Irish newsboy on the street.

Garrison. Yes, Tim saved my life that day. Tim's in the army now, adjutant-colonel.

Hezekiah. Well, I've got a boy at the front. That's what brings me to Boston today. He must be fighting at Antietam this very minute. When do the latest bulletins come in?

(Enter telegraph messenger. Mrs. Garrison signs. Garrison turns back to work. She reads the message and hands it to Stickney. Cheering outside.)

Anthony (outside). Now, boys, give him the nine. Ready, one, two, three, Garrison!

(Enter Anthony.)

Anthony. Congratulations, Mr. Garrison.

Garrison. I don't understand.

Mrs. Garrison. William, it has come at last. Those cheers outside were for you. Hear Tim's telegram. "Mr. Lincoln has signed the proclamation. The slaves are free. Tim." And here, William, William, listen! here is a telegram from Mr. Lincoln himself. *(Reads)* "Thanks and deep appreciation to the upholder of American freedom. You have taught the country that slavery is wrong. You have helped to make us all free, a United States, where all men are free and equal. Abraham Lincoln."

(Garrison, after one long breath, turns suddenly to the case and begins to work swiftly.)

Garrison. Lincoln says this to me, and I thought him—

Mrs. Garrison. What are you doing, William?

Garrison. Destroying my words against Lincoln. Setting up the last issue of the *Liberator*. Dear friends, my life's work is done. For over thirty years I have labored for the freeing of the slaves. Now they are free! Mr Lincoln will carry on the war till he compels the South to give up their prey. Now I can die in peace. *(Meanwhile other eager friends have crowded into the office, among them Thomas and Phillips.)*

Thomas. Your work done! It is hardly started. Your work will not be completed, nor will mine nor any other citizen's until every foul pool of wickedness in this country is drained.

Garrison. When the harvest is all reaped, do the laborers still stay in the field?

Mrs. Garrison. William, you must not stop. What will you eat, where will you sleep?

Garrison. What do these trifles matter? My work is done. The slaves are free.

Phillips. My friend, why do you stop? Even if the blacks are free, there are others who suffer in bondage. The white laborer still toils in chains. Long hours, small wages, tedious work, all help to make link after link of hardship. Mr. Garrison, your help and influence are needed. Will the *Liberator* refuse its powerful aid to this cause?

Garrison. That is your work, not mine. Your work is still ahead of you; mine is now behind. It has been said of me that my only purpose in running this paper was to make my living. Shall I make it true? I began this work because the slave was a burden on my soul. His chain chafed my wrists. The lash which he felt drove me to darkest despair. And now shall I work myself up over something else? No, I say my work is done.

Anthony. But my dear Mr. Garrison. You have acquired so much influence. Why not enter politics in some worthy cause? Now, if you—

Garrison. Ay, turn the force used for helping the oppressed to assisting the oppressor.

Anthony. My dear Mr. Garrison, you cannot be thinking of depriving the country of your paper, the fount of truth and freedom?

Garrison. My dear Mr. Anthony, fourteen years ago my paper was the Devil's Bible, the fount of all hatred and falsehood.

Anthony. Sir, I admit that fourteen years ago I, like many others, was in the wrong. But a statesman must be open to conviction. Your eloquence sir, convinced me.

Garrison. And my prominence.

Anthony. Your prominence, Mr. Garrison, is but the well deserved proof of your eloquence. You and your paper should enter politics.

Garrison. Mr. Anthony, my paper has been devoted to a high and just cause. It shall never be the organ of hypocrisy and cupidity. Good day, sir *(Exit Anthony.)*

Thomas. My dear friend, let me beg you not to discontinue the *Liberator*. From the cowardly, slaving negro you have made the brave freeman. Is there no more to be done? Must we lose your powerful influence? The earnest, thinking men of Boston look to the *Liberator* for guidance. The world cannot spare your noble paper. The *Liberator* and the *Liberator's* maker are immortal.

Garrison. My friends, say no more. I am going to close shop forever. The slaves are free; their shackles broken. The work of the *Liberator* is done. The many weary days I have spent in this shop have not been spent in vain. The object I have so painfully sought is won, thanks to Mr. Lincoln, the purifier of this blood-stained country. I thought him incapable, and he congratulates me, thanks me, this President whom I thought a weakling. He has finished my task. Did I once have a picture of this man? (*Finds one; hangs it up.*) Look at the greatest man in history!

IV.

The poem which Benjamin, a member of the eighth grade, wrote, and which closes the Lincoln exercise of 1919, was Benjamin's expression of the conviction of the whole class after their study of Lincoln: that Americans should study his character and carry on his teaching. It is this idea that they tried to convey throughout the exercise.

ABRAHAM LINCOLN

SALUTE THE FLAG.

SONG: *Star-Spangled Banner*.

READING: "*Abraham Lincoln Walks at Midnight*".....VACHEL LINDSAY
Elizabeth.

He cleft the rail, as did many of his followers, but he thought of higher things. Still, little did this humble rail-splitter realize how even Europe would cherish his name; little did he think that his picture would be in many a Russian peasant's hut—the picture of an American peasant who lived to reach the very mountain-top of fame, to guide America through a dreadful war, to set her slaves free. To us he is living still, and when any great question comes to us, we turn to him. What would he do in the present crisis?

Were Lincoln at the Peace Conference now, his would be the commanding figure.

An American poet gazed at the well known cast of Lincoln's hand and wrote,

"Look on this cast and know the hand
That bore a nation in its hold:
From this mute witness understand
What Lincoln was—how large of mould."

Can you not see him put out his great hand, as if to protect the people's

rights, Lincoln, the world's best friend? Perplexed and bewildered by baffling problems, we Americans instinctively turn to the great teacher of America, Abraham Lincoln.

William.

Is this great teacher, who guided America through the Civil War, helping to solve the problems that are arising in Europe? Yes, for his spirit thrills Americans to make the world safe for all people. It was his steady teaching that brought the full meaning of democracy to us. Amidst our perplexity and bewilderment before the great questions now to be settled, we fix on the way in which this humbly great man treated his enemies. "Let us judge not that we be not judged," he said. But it hardly seems possible that we cannot punish the guilty one, the one at whose cruel commands a heel of iron crushed those in the way of his blood-thirsty hordes. Would Lincoln say, as he said in 1865, "I hope there will be no persecution, no bloody work after this war is over. No one need expect me to take part in hanging or killing those men." What would Germany do in our place? One dreads to think of it. Yet perhaps more may be taught by mercy than by punishment. While the world is bitter with revenge, we look for Lincoln's example. Though on the bloody battlefields of war he knew his men had fallen fast, though he sympathized with the people at home over the loss of the brave men who struggled for the Union, at the end he was bitter toward none. In his second inaugural address he says, "Neither party expected for the war the magnitude or the duration which it has already obtained. Each looked for an easier triumph and a result less fundamental and astounding. Both read the same Bible and pray to the same God; and each invokes His aid against the other."

"With malice toward none, with charity for all; with firmness in the right, as God gives us to see the right, let us strive on to finish the work we are in; to bind up the nation's wounds; to care for him who shall have borne the battle, and for his widow, and his orphan—to do all which may achieve and cherish a just and lasting peace among ourselves, and with all nations."

Robert.

If Lincoln were at the peace table, can we imagine what his great mind would think or his tongue would speak? Would he want revenge on the German people? Would he not think of himself in their places? Would he not consider whether it was the fault of the people that this war came on? I dare say he would remark, in his quaint way, that it reminded him—and then would come one of Lincoln's inimitable stories. Why had these simple stories so much power and force? Many a long discussion, many a heated argument, he forestalled by one of these homely tales. The opponent was won, his ill humor dissolved.

Every one knows that after Booth's cruel bullet had done its deed, all of Lincoln's noble, kindly ideas were put aside, and hateful plans of revenge against the foe were laid. Military governors were placed at the head of the states and deprived the people of their just rights. A law was made that all those who had borne arms against the Union were barred from holding

public office. Carpet-baggers took possession of the crippled South, and with their cunning persuaded the ignorant negroes to vote for them. The South was so paralyzed that the work of reconstruction was almost impossible. During this time the Ku-Klux Klan was organized. They made it their duty to punish and harass the negroes. Sometimes they hung and killed innocent negroes. This could have been prevented if the military governors had filled their offices properly. A second great mistake was in allowing all the negroes to vote. This was far from being Lincoln's plan. He wished to give the vote to all negroes of superior intelligence, and to those who had fought in the armies of the North. The rest he would have made apprentices, taught good trades, and given them the vote as their intelligence justified it. If Lincoln's assassination could have been averted these mistakes and many others would have been prevented. If Lincoln had lived, the bitter feeling in the South and the persecution of the rebels would have been avoided. So now, in this great reconstruction period, let us study the ideas of Lincoln and prevent, as far as possible, bitter feeling throughout the world.

I see Lincoln at the Peace Conference, pleading for a worthy judgment. I hear him rebuke the man who urges revenge; I hear him say that there were many men responsible for the conflict, and that, "If we had tried to wipe out that black cloud long ago, there would never have been such an enduring war." I hear him urge, everything to help civilization and nothing to hinder it. If Lincoln's teachings have reached us, we shall think before we take revenge. "It is rather for us to be here dedicated to the great task remaining before us; that this world under God shall have a new birth of freedom."

Helen.

The great task remaining before us is world peace—not an armed peace like the last, but real peace. We must not have another war. When we think of the horrors of the recently ended conflict, we foresee the power of destruction of a future war. The earth will not be a fit habitation for men. Much of the fighting will be done by inanimate things, striving to conquer and destroy other lifeless monsters. All the age-long struggle for construction will be cast aside by the pitiless arm of destruction. Gas will be invented that will not only kill all life, but destroy buildings as well. Deadly artillery will wipe men off the face of the earth, seconded by such improved airplane bombing that an army of men must needs be employed to stand day and night, telescope in hand, or ready with anti-aircraft device, to prevent a sudden attack on the coasts. Overwhelming taxes will have to be imposed to support the armies.

The farmer, the weaver, the builder, all the men upon whom we lean for food, clothing, shelter, will leave their plows, their looms, their mills, for the gun, the tank, the bomb. The great beast of war crawling from its den will breathe death on men in the field and children at home.

If all this horror, bloodshed, and expense can be averted by a democratic league of nations, would Lincoln allow the Peace Conference to fail? Lincoln was not a man of war, though he "would accept war rather than let the nation perish." But he believed that the people could rule.

"Why should there not be a patient confidence in the ultimate justice of the people? Is there any better or equal hope in the world?

"Our popular government has often been called an experiment. Two points in it our people have already settled—the successful establishing and the successful administering of it. One still remains—its successful maintenance against a formidable internal attempt to overthrow it. It is now for them to demonstrate to the world that ballots are the rightful and peaceful successors of bullets; and that when ballots have fairly and constitutionally decided, there can be no successful appeal back to bullets. Such will be a great lesson of peace: teaching men that what they cannot take by an election, neither can they take it by a war; teaching all the folly of being the beginners of a war."

Josephine.

So with the other great problems of the peace table. What is to be done about Russia? How are the claims of the Balkan States to be adjusted? How are the boundary disputes among the various new countries to be settled? What can the League of Nations do to protect uncivilized people? Every question requires a vast knowledge, but no knowledge will be of use without Lincoln's scorn of trickery, his patience, his faith in humanity, his humility. If America can make these qualities her own, she can so powerfully support Mr. Wilson, that no wiliness, no dishonesty, no secret belief in the war and revenge, and militarism can withstand America's demands. Because we believe America is trying to do this, we say:

He can sleep now. His great free soul can rest. His hours of work are not in vain. Kings are no more, and war has ceased. Peace is laying hold on the souls of the people. The world of peasant-folk is released. The shining hope of Europe free has come. Kings no more quarrel and slaughter. The great idea has come to the whole world. The people understand that no one can be free unless all are free. But a short time ago, the toil and travail of Lincoln seemed in vain. But warriors have turned to the work of the peaceful plow. A new era has begun. May peace rest on this earth forever.

Benjamin.

Oh, mourning figure, can men say that yet you mourn;
That yet your hours of grief and care endure;
That yet your lessons are not taught?

No, yet you live,
For how could we forget the weight of all your teachings?

Oh, foe of murder, sleep on in peace,
You need not walk the nights away,
We heed and carry on your teachings.

Yea! even on your grassy hillside
You are with us, as in times before.

You have won, you have won
In your hard fought struggle.
Sleep, and trust your followers
To bring you peace, "white peace."



ADAPTATION IN THE CONTENT OF HIGH SCHOOL SCIENCE

The principle that the needs of society determine the work of the school includes as a corollary the necessity for constant adaptation in the processes of education, since the determining needs of society are undergoing a constant evolution. However, the tendency of teachers, of school administrators, and of the entire educational system, is to oppose change and to crystallize both the subject-matter of the curriculum and the methods of presenting it.

As a result adaptation does not take place smoothly and continuously, but suddenly, with resulting strain and disturbance. The war, which revealed many failures in co-ordinating the work in school with life outside of it, precipitated a period of general reorganization in education. The lessons of the war have emphasized the duty of the school to provide a real training for the responsibilities of citizenship, resting upon broad understanding and intelligent insight. As a result of this pressure, all subjects in the high school curriculum are seeking to justify their continued existence through the contributions which each makes toward training the socially efficient being, the good citizen.

It is not the purpose of this paper to present in a merely academic way the value of science study in training the future citizen of the world for the intelligent discharge of his duties.* Rather, it is the purpose to describe some ways and means which have been used in the class room, laboratory and general life of the school to render science study a vital factor in the lives of the pupils and to secure a larger measure of flexibility in the science courses and a better adaptation to individual interests and needs.

UTILIZING THE MORNING EXERCISE OR SCHOOL ASSEMBLY

Good citizens are active in placing valuable information at the disposal of their fellows. So in school the science classes can do a

*For a more complete summary of the purposes of high school science, see Vol. V, *The Course in Science*, pp. 138-141.

great deal towards actively sharing ideas and interesting facts with the rest of the school body. This finds a ready response in the general interest shown in scientific phenomena, and the eagerness to understand the demonstrations and explanations. In this school the daily morning exercise* furnishes the best opportunity for efforts of such a nature. Recently the chemistry class gave a series of four exercises. These exercises served to arouse interest in science in general and chemistry in particular; to stimulate pupils to thinking and perhaps experimenting at home and in leisure time; to illustrate the content of the chemistry course and to some extent to encourage pupils to elect science courses another year; to furnish the school with information on important topics.

The titles and outlines of these exercises are given in some detail.

I. WATER**

Introduction.—Importance of pure water to civic health and industrial prosperity.

Testing and Purifying Methods Illustrated Experimentally.—Suspended matter by sedimentation and filtration. Mineral salts by distillation, with tests for sulphates, chlorides, etc. Organic matter, including bacteria, by boiling and oxidation with potassium permanganate.

Purification by Coagulation.—Methods used at Columbus, Ohio, illustrated with roily water colored with cochineal.

Relation of Water Supply and Sewage Disposal.—Chicago Drainage Canal an open sewer. Better methods of sewage disposal in use in other cities.

II. CHEMICAL MAGIC

This exercise consisted of a series of spectacular experiments performed in such a way as to mystify the audience and challenge their ability to find a satisfactory explanation. It was gotten up by a small group of the class, more as a chemical vaudeville entertainment than a regular exercise in chemistry.

A variety of indicators and reagents were used to turn water into wine and back again, convert a large jar of apparent ink into clear water, a portion of which was drunk, and to produce other striking color changes. Sympathetic ink was devised and used to predict magically the outcome of an election to be held on the morrow. For this purpose the writing had been done upon large sheets of paper with a solution of

*For full exposition of the place and function of the Morning Exercise, see Vol. II, *The Morning Exercise as a Socializing Influence*.

**For another morning exercise on this same subject, given verbatim, see Vol. II, *Chemistry of Water*, pp. 84-89.

potassium sulphocyanate. The messages were caused to appear by spraying the paper with a dilute solution of a ferric salt from a fine atomizer.

Explosive soap bubbles were formed by blowing the air through a concealed bottle containing a little gasoline. With the use of a spot light on a darkened stage a striking effect was produced.

An unlighted cigarette was apparently smoked, whereupon the smoke was caused to appear in a large bell jar upon the table. Ammonia and acid fumes, used with a little sleight of hand, accomplished this.

Large round filter papers had been previously treated with a solution of potassium nitrate. These were suspended in proper order and each one was set off with the red hot tip of a file. The letters burned out, spelling the word "Chemistry."

Water, poured into an apparently empty pan, was set on fire. This effect was produced by igniting a concealed cloth saturated with alcohol, by means of a small bit of potassium.

The final trick involved the calling down of "fire from heaven." Red and green fire were ignited by electric spark from a concealed spark coil and at the same time the national emblem dropped across the rear of the stage.

III. EXPLOSIVES

Introduction.—Explosion defined as rapid burning and an explosive as an intimate mixture or combination of oxygen and a fuel.

Gunpowder.—Composition and burning explained. Gun-cotton; composition and burning explained. Comparison of volumes of gases by equal amounts of gunpowder and dynamite illustrated by the use of charts. Meaning of high explosives made clear.

Explosives in Warfare.—T.N.T. as a type of modern high explosive, used in shells.

Motion Picture.—*Farming with Dynamite* (reel loaned by Du Pont de Nemours Company) showing interesting uses of dynamite on the farm.

IV. NITROGEN

Composition of the Air.—Rough analysis performed as an experiment. Calculation of weight of nitrogen in air resting on the roof of the Auditorium immediately over the heads of the audience.

Nitrogen.—Its inertness illustrated by experiment. An essential life-giving element. The nitrogen cycle explained by colored blackboard diagrams.

Problem of Nitrogen Fixation.—Relation to explosives in warfare. Government plants in the United States and their significance for the future welfare of the country.

These outlines show how civic and national problems may be drawn upon to furnish interesting work for a class, and how the ideas of the whole school may be clarified by a suitable morning exercise growing out of such studies.

THE STUDY OF CURRENT SCIENTIFIC EVENTS

During the war the rapid development of all sorts of scientific devices furnished an especially strong motive for the study of current events in the field of applied science. Every member of the science classes was eager to learn all he could about submarines, airplanes, machine guns, gas warfare and so forth, and this interest was by no means confined to the science classes. To take advantage of this desire and of similar interests along other lines, the whole high school was organized into groups, according to their major interests, science, military strategy, war literature, relief work, political developments.*

The science section was so large that further sub-division according to interests was possible. Groups were formed to study aeronautics, gas warfare, submarine construction and warfare, artillery developments, and methods of camouflage. The section met weekly at a regular period to hear reports from these groups, or to listen to outside speakers, of whom we were fortunate to hear a number on interesting topics. These included talks on "The Emergency Fleet Corporation," by a member of that organization; "The Training of an Aviator," by an instructor in that branch of the service; "Lighting and Signaling Devices," by a patent lawyer, and "War Experiences," by a number of returning graduates and friends of the school. The time was never permitted to drag, and usually more reports were ready than could be presented. Questions were numerous and interesting, though often information that would make the answers adequate was lacking. The responsibility for the meetings was readily assumed by the pupils in a way which showed their deep interest. The reports by pupils included the following: History of Aviation; Flying Stunts; Types of Military Planes; Mustard Gas; The Gas Mask; Development of the Machine Gun; Thermit, with demonstration experiments, and many others.

The intense interest in the military aspects of science evaporated with the coming of peace, but the same plan is now being continued for the study of current scientific developments and of the industrial aspects of science. This supplements more closely the work of the physics and chemistry classes, and so provides for a closer articulation of the science of the classroom and laboratory with that of industry and commerce.

*See the brief article in this volume, *The Study of Current Interests in the High School*.

TOPICS AND PROBLEMS INCLUDED IN THE REGULAR WORK OF THE PHYSICS AND CHEMISTRY CLASSES MAKING FOR FLEXIBILITY

The following list is added to show a great variety of interesting topics which may be drawn upon for illustrative and informational purposes, special assignments, and individual reports. Local conditions, individual interests and needs, and the amount of time available must determine the selection of these topics, their emphasis and their proper organization into the larger units of study. Such a list could be greatly extended; nevertheless, many topics suggested must through necessity be omitted, or only occasionally included.

CHEMISTRY*

Fertilizers.—Problems of soil fertility, elements needed by growing plant and function of each. Photosynthesis and carbon dioxide cycle. Nitrogen cycle and function of nitrogen fertilizers. Potash, a German monopoly until war forced American chemists to search and find new sources. Use of limestone and phosphate rock.

Artificial Stone.—Limestone and its derivatives, lime, mortar, and plaster. Portland cement, its manufacture from natural marls, from slag of the blast-furnace. Excursions to lime kiln and cement mills. Cement construction, its great possibilities. Concrete and stucco. Gypsum and Plaster of Paris. Clay products, brick, pottery, chinaware, and porcelain.

Glass.—Crown, flint, and lead varieties. Special glasses for chemical ware of low coefficients of expansion. Coloring glass, with borax beads as illustrations.

Coal.—Composition and fuel values of different varieties. Heat units as a basis for purchase. Distillation products: coal tar, ammonia, coke, and gas. Derivatives of coal tar: light, middle, and heavy oil, tar, pitch. Relation to dyes, explosives, and drugs.

Petroleum.—Fractional distillation into burning oils, solvent oils, lubricants, paraffins. The automobile and the gasoline supply. Oil shales as a possible source of future supplies.

Wood.—Distillation of wood to produce methyl alcohol, acetone, acetic acid, charcoal. Print paper as made from wood.

Explosives.—Black powder, nitro-glycerine, dynamite, gun-cotton, trinitro-toluene. Relation to nitrogen fixation by the arc, Haber, and cyanide processes.

Paint, Varnish, Etc.—Paint oils and driers, varnish, shellac, copal. Linseed oil, oil cloth and linoleum. Pigments, white lead, red lead, iron oxide, lead chromate.

*For a fuller treatment of these and similar topics, see Vol. IV, *Some Laboratory Experiments Involving Real Chemical Problems*, pp. 119-125, and Vol. V, *The Course in Science, Chemistry*, pp. 160-168.

cleansing Agents.—By acids; oxalic and hydrochloric. By alkalies; caustic soda, soap, emulsification. By solvents; carbon tetra-chloride, benzine. Spot and stain removal. Composition of trade-marked cleaning fluids.

foods.—Sugar: preparation and refining of beet and cane varieties, conversion to caramel, inversion. Starch: manufacture from corn, cooking to dextrin and paste, hydrolysis to glucose. Fats: olive oil, cotton-seed oil, butter, oleomargarine. Hardening oils by hydrogenation with nickel as a catalizer.

beverages.—Charged waters: soda, mineral. Infusions: tea, chocolate, coffee. Fruit juices and fermentation. Industrial and denatured alcohol.

dyeing.—Direct and mordant.

matches.—Phosphorus and safety types.

photography.—Chemistry of blue prints, plates, films, prints, toning, etc.

adhesives.—Gums, paste, dextrin, glue.

inks.—Various kinds.

abrasives.—Carborundum, emery, alundum, metal polishes.

refuse Disposal.—Sewerage and garbage. Fermentation and putrefaction. Civic problems. Disinfectants and deodorizing agents.

preserving.—Sterilizing, pasteurizing, drying, pickling by salt and sugar. Chemical preservatives and tests for them. Administration of Food and Drug Laws, state and national.

PHYSICS

The list of physics is brief, only larger topics and problems for class study being given, without elaboration:

How the government protects the public from fraudulent weights and measures and dishonest practices. The work of the city sealer.

Heating and Ventilation in School and Home

The Work of the Weather Bureau

Municipal Lighting

Class study of familiar machines and devices: the victrola, bicycle, automobile, camera, vacuum cleaner, electric toaster, etc.

Water Wheels and their Development

White Coal and Conservation of Forests

Cold Storage and Artificial Ice

The Street Car System

The Water Works and Fire Prevention

The Submarine and Deep Diving Apparatus

Newspaper Printing

Electro-plating and Electro-typing

Three and Four Color Printing

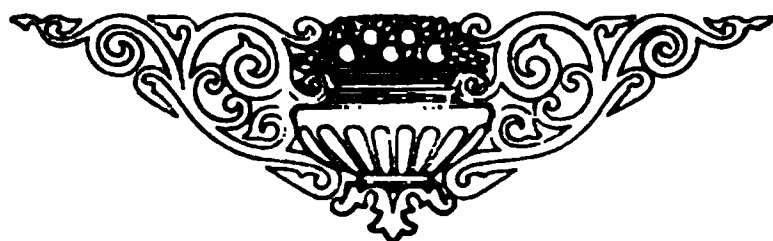
The Telephone and the Central Exchange

Wireless 'Telegraphy* and the Wireless Telephone
The Development of Electric Lighting

Such topics as these are not new in courses in physics and chemistry, but the emphasis on them and the number of them should be greatly increased if science study is to have that quality of reality essential to educative activity. Courses of study in science have a marked tendency to crystallize into a static state. This is perhaps due to the nature of science material, which lends itself to easy classification and organization. There is ever the danger that the teacher, content with teaching the system, the classification, may miss the vital connections by which the facts of science become significant and full of meaning to the pupil.

Successful science teaching in the changing world of today requires a flexible course of study, the use of a wide range of projects, problems, and applications, making possible a closer adaptation to local conditions and individual interests and needs. Teachers of science have failed to keep the content of their courses up to date; they have lost contact with the latest discoveries and applications in which the pupils are often most interested. These faults must be corrected if science study is to accomplish its great purpose and become as vital in the life of the school as it is in the life outside.

*Just prior to the war a number of high school boys organized and equipped a very successful Wireless Club. A small building on the school grounds was assigned to their use. This was thoroughly overhauled by the boys and an excellent set of instruments had just been installed when the government closed all amateur stations. The apparatus was donated to the school upon the graduation of most of the club members a year ago. A new club has now been formed by the boys of the physics class to carry on the study of this project. It is open, under certain conditions, to other high school boys.



NEW MATERIAL IN MODERN LANGUAGE WORK

NOTE: This article was completed by Mr. Merrill only a short time before his sudden death, November 1, 1919. It is indeed tragic that his life was cut short at a time when the influence of his ideals was spreading rapidly, through the publications described in the article. It is to be hoped that some way will open for the continuance of a work so valuable to modern language teaching throughout the country. The following excerpt from the memorial statement, in the third number of *Le Monde Français*, will show how generously he gave himself to the fulfillment of his ideals.

"Mr. Merrill gave all of his time, outside of his teaching, to these publications, and they reflect the painstaking devotion he gave to them. He spared neither time nor expense in making them as perfect and as progressive educationally as possible. His summers were spent in travel and study on the continent, and lately in Cuba and Porto Rico, gathering material for the new issues. Nothing is more indicative of the thoroughness which characterized Mr. Merrill's work than the large force of collaborators he called in to help in editing and criticizing the material selected for publication. Surely the ideas for which he strove survive, and his work for the improvement of the teaching of modern languages will keep his memory alive through many years to come."

In order to make the modern language work responsive to the special needs of the pupils, we hold to the ideal of selecting topics as far as possible associated with subjects of special interest to the child. Since the teachers are free, so long as they observe the college entrance requirements, to use any methods or present any topics for discussion which are believed to be worth while, many points of contact have been found between the modern language work and the work of other departments. We believe in examining closely the work and play of a grade in order to discover profitable connections between it and the teaching of a modern language. While many opportunities have escaped us, and while not all the teachers have been able to plan their work along this special line, nevertheless, as we look back over the years of the school's existence, many examples occur to us showing the relation of a modern language to a grade activity.

At the very beginning of the course, in the work of all primary grades, the point of contact is play rather than work. Therefore, games in which a foreign language is spoken or sung are intro-

duced. *Sur le pont d'Avignon* and *Fuchs, du hast die Gans gestohlen* are typical of games played by the youngest children. The children delight in the opportunity to express themselves in a foreign language when this expression is a part of some interesting activity.

With geography many obvious points of contact exist, and a vast amount of intensive work has been accomplished at different times during the school's history. In the grammar grades much supplementary work has been done on such subjects as Brittany, Normandy, the Tell country, and the Black Forest. The high school Spanish classes have studied life in Cuba, Porto Rico, Spain, and other countries where the language is spoken. Of course maps and charts are constantly in use in all high school work. In addition, special leaflets have been prepared by some of the teachers and used from year to year in the classes.

The study of certain periods of history has also been enriched by the modern language work. Seventh grade classes studying the time of chivalry enjoyed in their language work stories of the typical mediaeval heroes, Roland, Charlemagne, Siegfried. Pictures, personal souvenirs of travel, and wall charts, showing life in the older times in peace and war, illustrated these discussions.

With music, the associations are many and delightful. Folk-songs and songs for special occasions, particularly Christmas, are always great favorites. For years no Christmas celebration was complete without the singing of beautiful old songs of the countries whose languages were studied. The war modified this tradition to some extent.

Senior classes have found it decidedly worth while to devote some time in their modern language work to scientific reading. Boys keenly interested in chemistry are especially eager for this work and often acquire considerable proficiency in reading German texts on the subject.

For years it has been customary for the students in certain modern language classes to devote a good deal of attention to rapid reading without translation, in order to gain a feeling of power in the use of the language, but particularly in order to increase their appreciation of literature. In some groups each student pursues a different course of reading but makes frequent reports to the class on the work done or the problems encountered. Each pupil is encouraged to read books which he can understand, on subjects which to him are of special interest. Gradually and very encourag-

ngly the power of reading without translation is developed. Pupils accomplish a good deal of this reading during the long summer vacation, a few even finding pleasure in additional study of the classics.

In the three modern languages taught at the school, a vigorous international correspondence has brought about a more vivid appreciation of life in the great foreign world. The first exchange of letters was arranged some ten or twelve years ago between pupils in our high school and young people in German schools. For the past year or so a fairly brisk correspondence has been going on between our pupils and French, Cuban, Porto Rican or Spanish boys and girls. Similar letters are planned to include German Switzerland.

The arrangements for the Spanish correspondence with Cuba were made through personal friends of the writer. At the start all pupils, even in high school classes, have written in the mother tongue on topics presumed to be of special interest to the correspondent in question. Pictures, postcards, and newspaper clippings were enclosed. The next step in the correspondence will be the writing of letters in Spanish, with the hope of receiving the native correspondents' criticism of idiom and construction.

Through the Department of Public Instruction in Porto Rico, several correspondents in San Juan high schools were secured. A teacher in this city suggested to the Porto Rican boys that they should write as to an intimate friend—using the intimate form of address—and should tell their new friends of interesting happenings on the island and customs of native life. A typical letter, written by a Porto Rican boy to his friend at the Parker School, follows:

Mi queridísimo amigo:

Recibí la tuya, la cual me causó gran alegría, pues ya yo creía que mi carta se había perdido.

Me alegraría mucho, si pudieras dar un viaje a Puerto Rico, para que veas nuestra isleta. Todos los extranjeros que vienen aquí la encuentran muy bonita.

Yo pienso mandarte algunas fotografías de varias cosas de aquí.

Cuéntame algo de cómo celebran Vds. las navidades. Aquí acostumbramos a que los niños pongan en la noche del 5 de enero una cajita con hierba debajo de las camas de sus padres, y el día 6 encuentran muchísimos juguetes. Los niñitos se creen que los reyes son verdaderamente los del cielo, y que por lo tanto tienen que venir a caballo. La yerba que ponen en dicha caja es para que los caballos se alimenten antes de regresar al cielo.

Cuéntame algo de lo que pase en tu escuela, referente a los estudios y

los discípulos.

Ya casi todos los soldados portorriqueños que salieron para Panamá han regresado, los cuales hemos recibido con gran entusiasmo. Todavía falta por llegar la banda del Regimiento.

Sin más de momento, se despide tu fiel amigo,

Jorge Martinez.

In order to secure suitable addresses from Spain, Argentine, and Mexico, letters were written to American consular officials. Courteous replies were received, giving the names of teachers or schools interested in the subject of international correspondence. One of the young men from that city sent views of Barcelona, so that his new friend "might admire a little this beautiful city."

The greater part of the recent correspondence in French had its origin in societies for the relief of the fatherless children of France and in other welfare organizations. When the school decided to adopt a number of French war orphans, letters were interchanged in order that our pupils might learn more definitely of the needs and desires of the children they wished to help. Through the courtesy of Mrs. Walter Brewster, 741 Fine Arts Building, Chicago, the school was given a list of children needing assistance. Soon a very interesting correspondence developed between the French and American children. The following is a letter received by one of our pupils:

Fécamp, le 8 Décembre 1918.

L'armistice est là. Tout le monde est joyeux. On ne peut pas circuler sur les routes. Tout le monde est en fête, mais notre pauvre mère est restée chez nous à pleurer sachant que nous n'avons plus notre père. Toutes les maisons sont pavoisées, toutes les églises sonnent, les vapeurs sifflent et partout on tire le canon. Chacun se précipite avec des drapeaux à la main et crie: "Vive la France!"

La vie est très chère, mais dans notre ville il y a toujours du travail. En ce moment nous avons la pêche du hareng qui rapporte beaucoup et occupe bien des vieillards, des femmes et des enfants.

Votre petit filleul Justin a huit ans, il va tous les jours à l'école malgré son jeune âge. Il remercie beaucoup sa marraine en Amérique et gardera toujours son nom gravé dans son petit cœur.

I add another letter, expressing the gratitude of French soldiers for interest in their welfare:

Chère Madame,

Nos soldats, encore à l'ambulance, malgré la signature de l'armistice, sont bien heureux et bien reconnaissants que de si loin vous ayez pensé à eux.

Vouz trouvez que ces gentilleses, ces délicates attentions, ce beau travail, ce n'est rien, parce que vous le faites avec un grand cœur, mais nous vous

admirons autant que nous vous remercions, et nos chers soldats sont si **j**oyeux que si vous le voyiez cela vous ferait plaisir.

Pour cette année ils ne feront plus Noël dans les tranchées, beaucoup **o**btiennent des permissions pour aller chez eux, c'est plus gai.

Pour nos soldats et pour nous, nous vous prions d'agréer, Madame, nos **s**incères remerciements et nos vœux de bonheur pour Noël et 1919.

Que le Bon Dieu bénisse et fasse toujours plus grande la vaillante et **g**énéreuse Amérique et ses fils.

Pour les soldats de France

Servante du Sacré Cœur

Sœur Rose.

59 Avenue de Paris

Versailles

26 Décembre 1918

In order to bring certain aspects of life in foreign countries into our study of modern languages, the writer, with the collaboration of many colleagues in various parts of the country, organized in 1910 a series of four booklets each year, for students of the German language. In a comparatively short time *Aus Nah und Fern* came to be used as a basis for conversational work and for general supplementary reading in all sections of the country. The topics discussed were mostly non-political. The progress of science and industry has always interested the readers, and such special features as anecdotes, travel sketches, illustrated stories, proverbs and games, give amusement and a sense of familiarity with the foreign idiom.

In 1918, *El Panorama*, a series of Spanish booklets of a similar nature, was established, featuring life in the Spanish-speaking world; it contained many letters from Cuba, Porto Rico, South American countries, and Spain, especially from young people of high school age. During the past year *Le Monde Français* has been started to meet the needs of students of the French language. All members of the French Department of the school, as well as many other representative teachers of the language, have assisted in the preparation of the text.

With the increasing complexity of modern life, our interests are coming to have more and more in common with those of foreign peoples. We share with them the work of making discoveries which advance the civilization of the twentieth century. Our commercial, political, and educational relations with other countries are inevitably becoming more closely knit. It is important that this interweaving of national interests should be accompanied by strenuous

Sample Page from El Panorama

LOS RESTOS¹ DE COLÓN

En mayo de 1506, Colón murió² en Valladolid, España, y después de haber estado sus restos en algunas catedrales de la Península, fueron trasladados³ a Santo Domingo. De allí fueron llevados⁴ a la Habana en 1796 donde se depositaron en la Catedral de esta ciudad hasta 1898 cuando se trasladaron otra vez a España al evacuar los españoles la Isla. Sin embargo,⁵ la gente⁶ de Santo Domingo cree que los restos del Gran Descubridor están aún en la Catedral de su capital. La confusión proviene⁷ de que en la catedral de Santo Domingo estaba enterrado, además del Descubridor, otro pariente⁸ de él, con el mismo nombre y apellido.⁹

Los restos de Cristóbal Colón descansan¹⁰ actualmente en la Catedral de Sevilla.

¹remains. ²(morir = to die.) ³trasladar = to remove, to transfer.) ⁴(llevar = to carry.) ⁵(sin embargo = no obstante = nevertheless, however.) ⁶people. ⁷provenir = to arise, originate from.) ⁸relative. ⁹surname. ¹⁰(descansar = to rest.)

CUADROS DE LA HISTORIA DE CUBA

Después de¹ tres años de ocupación americana, durante los cuales se hicieron muchas obras buenas, el Mayor-General Wood, Gobernador militar de Cuba, puso² en manos del Pre-

Sample Page from Le Monde Francais

POUR RIRE



Pendant qu'il était en France, un nègre du Sénégal apporte une petite boîte en bois à son Capitaine, et, lui demande de bien vouloir l'expédier¹ dans son pays.

Le Capitaine — Qu'est-ce qu'il y a dans cette boîte?

Le nègre — De la neige, je désire l'envoyer à ma mère; elle n'en a jamais vu.

¹send.

* * *

Une jeune Hollandaise débarque à New-York pour la première fois de sa vie. De là, elle prend le train pour Chicago. A l'heure du déjeuner, elle passe dans le wagon restaurant.¹ Le menu est pour elle le plus profond mystère et elle commande son repas,² au hasard.³ On lui apporte une chose bizarre qu'elle ne connaît⁴ pas. C'est un épi de maïs.⁵ Et imitant les voyageurs qui l'entourent,⁶ elle le goûte.⁷ L'étrange mets⁸ lui plaît,⁹ la façon de le manger l'amuse, et lorsqu'¹⁰ elle a tout grignoté¹¹ elle appelle le garçon¹² nègre qui sait quelques mots de français, lui tend¹³ l'épi dégarni¹⁴ et lui dit; "Remettez-moi des grains dessus¹⁵ s'il vous plaît j'en voudrais¹⁶ encore." Je vous laisse à imaginer la stupéfaction du brave nègre!

¹dining-car. ²meal. ³in a haphazard way. ⁴is not acquainted with. ⁵ear of corn. ⁶surround. ⁷tastes. ⁸strange food. ⁹pleases. ¹⁰when. ¹¹nibbled. ¹²waiter. ¹³holds out. ¹⁴empty. ¹⁵on it. ¹⁶should like.

* * *

Le père — Jean, pourquoi pleures-tu?¹

Jean — Oh! j'ai si froid aux mains.²

effort on our part to understand the national character of the different peoples of the world. To achieve this, schools must make more effort to vitalize the study of modern language. Two aims should be inherent in the work: first, to make more real to the pupil the life in other parts of the world; and second, to root out any prejudice against foreigners as such, and thus prepare the heart for a more generous feeling of brotherhood.



THRIFT AS AN ELEMENT OF GOOD CITIZENSHIP

In the successful prosecution of the war, we were called upon to practice extreme economy in the use of all materials required by our armies and by our Allies. This put to test the self-control and will power of our entire nation as it had never been brought to test before. Lessened production, both here and abroad, due to the withdrawal from productive industries of vast numbers of workers, made it necessary that a limited supply serve as great a number as possible. Wastefulness was a sin. Thrift was synonymous with patriotism. The schools made excellent response to the call and emphasized in every way possible the need for eliminating all waste. Materials previously considered of no value became of great importance, and salvage campaigns followed one another rapidly. Paper, bottles, rubber, tin foil, cotton, and wool junk increased in value. During the war the amount of money represented by the junk business for the whole country increased from \$100,000,000 to \$1,000,000,000 per year.

Will the country, after the emergency has passed, return to its former wasteful methods? We have been called a spend-thrift people. Odious comparisons have been made between our habits and those of foreign nations. The war developed in the schools a spirit of co-operation and an interest in the needs of the community. Efforts were made to enlist the aid of every child and teacher. Current problems of life were used as a basis for teaching. Will the schools revise their methods so as to preserve this contact with the problems of the present, or will they slip back to the old position of aloofness?

The following examples show how the attempt was made to emphasize principles and to form habits of thrift and conservation, by means of solving first-hand problems which touched the every-day life of the pupils. In each of these examples there was opportunity for the children to do a good deal of actual work on the problem, both in devising and in executing the plans.

POSTAGE-SAVING STAMPS

During the progress of the war, there developed an ever-increasing shortage of man-power, as armies were drafted and the energies

of the remaining workers shifted to the essential war industries. This threw a particularly heavy burden on our Government Postal Service. The increase in government mail, the various campaigns for war savings, Red Cross, and Y. M. C. A., the food conservation, the Council of Defense and other war emergency organizations, all added their many tons of mail matter to the heavy load of the handicapped postal service. Here was an opportunity for each member of the school to assume his share, small though it might be, of a burden which a public agency had formerly been depended upon to carry.

.....In our school, with its numerous activities, such as meetings of the Parents' Association, grade meetings, special lectures and recitals, and co-operation in public movements, numberless notices are sent to the homes by mail. The estimate for one year represented some 5,000 pieces of first class mail matter. It was proposed to the children that they be made responsible for delivering all such notices to the homes, and that they donate the money thus saved to the school branch of the Junior Red Cross. To carry out this plan the idea of the Thrift Stamp was adapted in the following manner:

The notices or announcements were mimeographed as usual, but instead of having the ordinary postage stamps affixed and being dropped into the mail box, they were delivered to the grade rooms. Here, a special stamp which had been printed in the school shop was attached. It was perforated through the center and so attached that one-half of the stamp could be torn off when the pupil delivered the letter at his home. The detachable half had a blank space for the parent's signature. This part of the stamp, after being signed by the parent, was returned to the class room by the pupil and attached to a "Savings Card," which represented cash earned by the class for the Red Cross. In addition to the "special delivery" feature this had also the advantage of a "registered" piece of mail, and served as a proof positive that the matter had been brought to the parent's attention. When a savings card had been filled with these receipted stamps, it was cashed at the Secretary's office, and the money was given to the Red Cross. This plan emphasized in a forceful way the lesson which the Government had been so rigorously expounding, namely, the immense total resulting from many small sums. It is believed that many pupils realized this, as the amount visibly increased on the cards in each class room.

SPECIAL DELIVERY

2 cents saved donated to Jr. Red Cross

Pay to the Jr. Red Cross two cents saved

Signed

POSTAL-SAVINGS STAMP

FRANCIS W. PARKER SCHOOL SAVINGS CARD

Grade10th

When filled may be redeemed at secretary's office, for benefit of JR. RED CROSS.

Pay to the Jr. Red Cross two cents saved Albert P. Allen	Pay to the Jr. Red Cross two cents saved E. Pander	Pay to the Jr. Red Cross two cents saved Mrs. Wiley	Pay to the Jr. Red Cross two cents saved Mrs. Wahlstrom	Pay to the Jr. Red Cross two cents saved Mrs. C. W. Gilmore
Pay to the Jr. Red Cross two cents saved Mrs. Wahlstrom	Pay to the Jr. Red Cross two cents saved Mrs. M. J. Stas	Pay to the Jr. Red Cross two cents saved Wm. O. J. Stene	Pay to the Jr. Red Cross two cents saved Mrs. B. T. Weil	Pay to the Jr. Red Cross two cents saved Agnes M. Salt
Pay to the Jr. Red Cross two cents saved Maggie Tilt	Pay to the Jr. Red Cross two cents saved Agnes M. Salt	Pay to the Jr. Red Cross two cents saved Sarah L. Davis	Pay to the Jr. Red Cross two cents saved Albert P. Allen	Pay to the Jr. Red Cross two cents saved Mrs. A. P. Allen
Pay to the Jr. Red Cross two cents saved John Hanningway	Pay to the Jr. Red Cross two cents saved Agnes M. Salt	Pay to the Jr. Red Cross two cents saved Sarah L. Davis	Pay to the Jr. Red Cross two cents saved Mrs. G. Tilt	Pay to the Jr. Red Cross two cents saved A. Kitz
Pay to the Jr. Red Cross two cents saved Mrs. B. T. Weil	Pay to the Jr. Red Cross two cents saved Emily J. Bissell	Pay to the Jr. Red Cross two cents saved Eda J. Beck	Pay to the Jr. Red Cross two cents saved John Hanningway	Pay to the Jr. Red Cross two cents saved Maggie Tilt
Pay to the Jr. Red Cross two cents saved Mrs. H. D. Dimes	Pay to the Jr. Red Cross two cents saved A. Kitz	Pay to the Jr. Red Cross two cents saved Mrs. C. W. Gilmore	Pay to the Jr. Red Cross two cents saved Mrs. A. Sander	Pay to the Jr. Red Cross two cents saved A. Kitz
Pay to the Jr. Red Cross two cents saved Mrs. Lerner	Pay to the Jr. Red Cross two cents saved Mrs. Maderwell	Pay to the Jr. Red Cross two cents saved John Hanningway	Pay to the Jr. Red Cross two cents saved Agnes M. Salt	Pay to the Jr. Red Cross two cents saved Maggie Tilt

SAVINGS CARD WITH STAMPS ATTACHED

THE SALVAGE CORPS

When school opened for the fall term the shortage of paper of all kinds was reaching the acute stage. Here again was a material which entered into the daily school life of our pupils, and here was an opportunity to stimulate a conscious effort to assist. Those who can hark back to the days when the slate was in vogue in the schoolroom are forcibly struck with the reckless way in which the child of the present uses his supply of paper.

This subject was discussed with the eighth grade pupils one day, and the questions were raised, "Do we use too much paper in our school? How much is wasted?" Many pupils admitted carelessness and waste. Some, more critical, accused certain grades of extreme wastefulness. Others suggested that the waste was greatest in connection with certain school courses. It was suggested that the grade resolve itself into a "Salvage Corps," make an investigation, and obtain facts to present to the whole school. It was proposed to carry this investigation over a period of two weeks. A certain amount of secrecy was necessary so that individual pupils or grades should not become aware of the plan and change their habits before the investigation was completed. The work was carried out on the following plan:

The class was formed into twelve committees, one committee for each day of the investigation. Promptly at the close of school this salvage corps set out on its rounds of the building and emptied each waste basket. The janitors, in the meantime, had been instructed not to empty any baskets during this period. The material which the committee thus gathered was brought to a central point and each bit of paper was carefully inspected. The paper was sorted. Into one pile went the legitimate waste, i. e., paper which had been fully used and could with a clear conscience be consigned to the waste basket. In another pile was placed all paper not fully used on both sides. It was viewed as criminal carelessness so to waste paper, while friends and relatives at the Front, writing letters to home folks, were carefully using both sides of the paper.

As stated above, the paper from each grade was carefully sorted, with a view to determining where the greatest waste occurred. While the opportunity of criticising and finding fault was particularly attractive to a few of the pupils, this tendency did not develop unduly. We might mention in passing that the teachers and the office force were not spared in the investigation. During this period the pupils made many suggestions, some of which were highly interesting, some impractical; they showed, however, that the entire group was seriously considering the matter. For instance, it was suggested that a censor be appointed in each room, whose station would be near the waste basket. Before a bit of paper could be discarded it must be "passed by the censor." Another pupil suggested that the individual supplies of the room be "pooled" and "daily rations" issued.

TOTAL AMOUNT OF PAPER USED FOR SCHOOL WORK, 1917-18

No. Pads	Kind of paper	Cost each	Total cost	No. Sheets 1917	No. Sheets 1918	Thickness of pads	Height of pads if piled up
A 1792	Ruled white	\$0.10	\$179.20	50	36	4 pads=1½ in.	42 ft.
B 1007	Plain white	.10	100.70	50	36	4 pads=1½ in.	23.60 ft.
C 537	Cross ruled white	.10	53.70	50	36	4 pads=1½ in.	12.58 ft.
D 595	3rd & 4th grade—white	.10	59.50	36	36	7 pads=1½ in.	10.50 ft.
E 182	2nd grade --white	.15	27.30	40	40	6 pads=1¼ in.	3.15 ft.
F 374	Yellow	.05	18.70	70	64	5 pads=1¼ in.	7.83 ft.
G 715	Drawing paper—water color	.10	71.50	20	19	6 pads= ⅞ in.	8.50 ft.
H 215	Special drawing paper brown and gray	.10	21.50	30	30	4 pads=1¼ in.	7.50 ft.

NOTE: Number of sheets per pad was smaller in 1918 because of increased cost of paper. Price per pad remained the same.

At the end of twelve days it was believed that enough evidence had been collected for use in a morning exercise. The question now arose as to the best method of presenting the evidence. It must be clear, forcible, and graphic. These two weeks, coming in the second month of the term, could well be considered as covering the normal or usual condition which prevailed in the school in regard to the use of paper. It was therefore decided, on the basis of this test, to determine what the waste would be for a year. In our school this was a comparatively simple matter, since pads of uniform size are used in all the grades and these are invariably purchased at the school store. Here, then, was the source for obtaining the amounts of the various types of paper used during the previous year. A committee was therefore appointed to consult the clerk, who was able to give the amounts used by each grade and the quantity of each kind of paper used.* The report of this committee inspired a considerable amount of discussion and much valuable arithmetic work, from which were evolved the tables and charts.

It was now necessary to get results from the work of the salvage corps, and this again necessitated much valuable arithmetic work. The attempt to classify the waste for each grade was abandoned, and results were tabulated for the elementary grades, the high school, the office, and special departments. This avoided making "horrible examples" of any individuals or grades. The usable waste for the twelve days' collection was carefully weighed, and the following tables were produced. Usable waste included paper blank on all or half of one side. This blank paper the pupils declared should be used before being consigned to the waste basket.

TABLE A
TOTAL WEIGHT OF WASTE PAPER—12 DAYS' COLLECTION

	Elementary Grades	High School	Office and Special Depts.	Total
White	15 lb. 10½ oz.	18 lb. 12 oz.	9 lb. 1¾ oz.	43 lb. 8¼ oz.
Yellow.	1 lb. 14 oz.	2½ oz.	8½ oz.	2 lb. 9 oz.
Cardboard.	4 lb. 12½ oz.	9½ oz.	1 lb. 6¼ oz.	6 lb. 12¼ oz.
Total	22 lb. 5 oz.	19 lb. 8 oz.	11 lb. 1½ oz.	52 lb. 13½ oz.

TABLE B
AMOUNT WASTED PER DAY (A÷12)

White paper	3 lb. 10 oz.
Yellow paper	3 5/12 oz.
Cardboard	9 oz.

* See table on preceding page.

TABLE C

AMOUNT WASTED FOR ONE SCHOOL YEAR

On the basis of 160 school days (deducting for holidays and vacations)
 $160 \times B \div 2 =$ Amount wasted during one school year. (Divide by
 2, because amount weighed had been used on one side.)

White paper	290 lb.
Yellow paper	17 lb. 1 1/3 oz.
Cardboard	45 lb.

TABLE D

WEIGHT OF ONE NEW PAD (exclusive of back and cover)

White paper	6 7/8 oz.
Yellow paper	6 oz.

TABLE E

NUMBER OF PADS WASTED IN ONE YEAR ($C \div D$)

White paper	674.9 lb.
Yellow paper	45.5 lb.

TABLE F

COST OF WASTED PAPER—ONE YEAR

White paper	674.9 lb. \times \$.10 = \$67.49
Yellow paper	45.5 lb. \times .05 = 2.27

Total.....	\$69.76
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Enthusiasm and interest through this stage of the work ran high. These were no dull problems culled from a book, fictitious and visionary. They were fraught with social values and had an important bearing on the present day life and habits of every individual pupil. Surprises and startling results developed every day. Conclusions and resolutions were drawn as the work progressed. Interesting discussions were held as to the best method of presenting the results of the investigation to the whole school. It was agreed that striking exhibits should form part of the exercise, exhibits which should impress each individual with the total amount of paper used by the school and the amount wasted. It was agreed that if the total amount of paper used in one year could be piled on the stage, the effect would be impressive. Since this was not possible, it was suggested that dummy packages be made according to scale. This plan was enthusiastically agreed upon, but proved to be quite a task. With hammer and saw, paper and paste, India ink and brush, a busy week was spent, with all the possible spare time used in preparing the facts in graphic shape for the morning exercise. However, the work was well worth while, for it carried the point.

When all the "dummy stacks," made of a framework of wood covered with paper, were completed, they almost filled the stage. One of the pupils made a drawing comparing the flag pole in front of the school with the year's supply of paper if piled beside it on the lawn. Eyes were opened wide with surprise when it was realized



THE STAGE WITH PAPER EXHIBITS

Height of Pads if Piled on Lawn

Flag Pole 98 Ft.

"A"-Ruled White Paper	-42 FT
"B"-Plain	" 23.60
"C"-Cross Ruled	" 12.58
"D"-3 ^d & 4 th Grade	" 10.50
"E"-2 nd Grade	" 3.15
"F"-Yellow	" 7.83
"G"-Drawing	" 16.
<hr/>	
115.66 Ft = Total Height	

CHART WHICH EXPLAINED THE DRAWING ON NEXT PAGE



PUPILS' DRAWING SHOWING YEAR'S PAPER CONSUMPTION

that such a pile would overtop the flag pole by several feet. In addition to the charts and exhibits already mentioned, a bale of waste paper ready for the junk man had a prominent place on the stage, with a placard stating the price obtained for such waste. Nearby was placed all the blank paper gathered during the twelve days' collection. This paper was later made up into scratch pads which were sold at the Red Cross Bazaar at one cent each.

It is believed that this graphic portrayal of a wasteful habit had a wholesome effect on the entire school. The grade which gathered the facts and presented the material certainly gained a great deal.

CONSERVATION BANK-BOOKS

To aid the pupils in their endeavors to save during the summer vacation each pupil was given a "bank book." In this he was to record day by day the various means by which he consciously

Book No. **363**

ALLIED BANK OF CONSERVATION THRIFT AND SUCCESS

**FRANCIS W. PARKER SCHOOL
330 Webster Ave.
CHICAGO**

Name _____

In Trust for the future of the Nation

∴ ∴ Help win the war ∴ ∴

OUTSIDE COVER OF BANK BOOK

assisted in the great problem of saving as much as possible of the many articles which were especially needed in winning the war. In this bank book the pupil deposited "to the credit of the nation," not sums of money—although there was provision for recording any such amounts earned—but endeavors to assist. For instance, there were several pages for recording ways in which the boy or girl could assist in freeing adult labor for more difficult tasks by doing many of the simpler duties about the house. Valiant efforts to acquire a taste for substitutes in the food line were recorded.

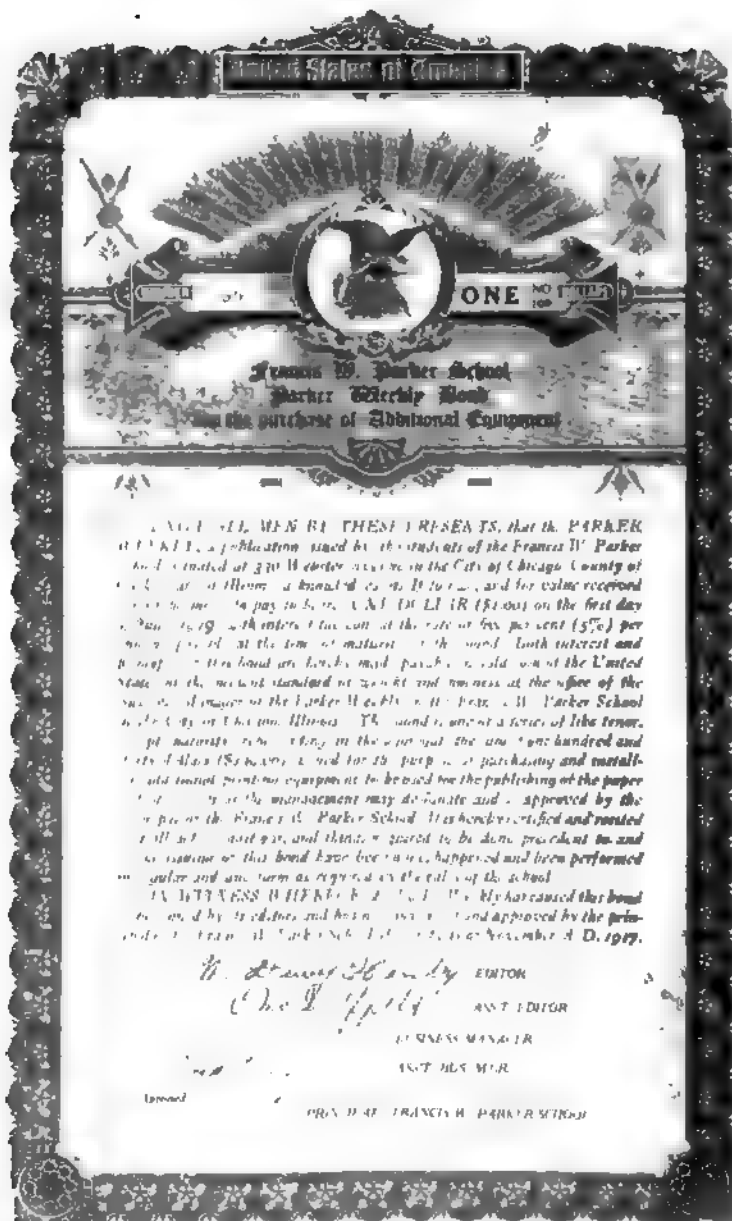
A morning exercise in which was explained the necessity of having everyone, big and little, contribute to this campaign of conservation, was held before the bank books were given out and the pledges signed. Facts were given to show the loss in material

Pledge

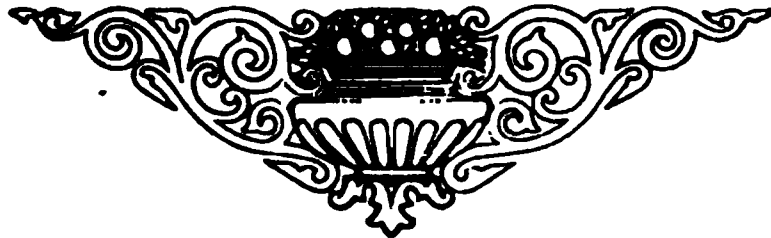
I know that the winning of this war depends not only upon the fighting in France, but upon the steady effort of every person here in this country - effort to make that fighting effective ; effort to preserve this nation's health and vigor until the time shall come when she may aid exhausted Europe.

I therefore pledge myself to try to save each day some share of food, of material or of labor which may in some small measure help my country to win this war.

Signed.....



is a crime against society, must we not set earnestly to work to inculcate thoughtful economy? We began many good things during the war, and surely the thrift campaign in schools was one of them. Shall we not, in training our children's habits, continue our effort to incorporate into our private and civic life intelligent, conscientious, and careful use of such materials, time, and labor as are necessary to society?



THE RELATION OF ART TO SCHOOL ACTIVITIES

THE LOWER GRADES

The fundamental thought in planning the art material for the grades is to let the central activities of each grade unfold the needs and possibilities of art expression. The important point to be remembered is that the child's interest centers in his own life experiences rather than in any problems planned merely to secure a result of skill or an expression of art. Colonel Parker says that the true function of art is "revelation and inspiration," and that "the strongest common factor in art is found in motive."* He also says that motive gives the necessary skill. Those who teach children need to remind themselves of these truths, to turn away from a desire to secure external results, to consider the child, and to note his ways of thinking.

In the first three grades, the child expresses ideas largely through symbols. He expresses activity rather than static form, because he is interested in what people are doing. The little child draws from imagination, not from the object. He is interested in objects only as they relate to his life. Fairy tales, nature study, tobogganing, snowballing, all vivid incidents in a child's daily life, clamor for expression.

The child's images change rapidly, and objects serve only to focus the idea. When the child has a limited written vocabulary of words, he interchanges words and pictures. The expression of the idea is the important thing, the method of expression, secondary. The desire to tell is the most active impulse of the younger children.

At one time I was very skeptical of what was known as correlation of art with the subject-matter, but as I have realized the possibilities which result when revelation and inspiration are the function of art, my skepticism has changed to approval of this method of presenting art. The intense study of a subject well adapted to the children produces clear images and a desire to express becomes real life experience. The child is the important consideration, and everything else is subordinate. We cannot force correlation in art. Art should never be made the servant of the subject-matter; on the other hand, a high purpose is fulfilled when it becomes its inspira-

**Talks on Pedagogics*, pp. 240-242.

tion. To some degree we are proving this and the following brief summary of the work in the grades indicates the practical working out of the idea.

FIRST GRADE

In the first grade the subject of primitive life, which includes the cave men, the Eskimo, and the Indian, is chosen for the basis for the year's work. (The grade plan also includes special literature work and nature study.) Pictures showing the activities of the cave man, the Eskimo, and the Indian are made by the children. Through play and imagination the child pictures their life: he builds a brush house, an Eskimo house, dresses like an Indian, and in many



FIRST GRADE DRAWINGS

other ways becomes acquainted with primitive life. The first illustration shows drawings of the primitive caves and brush house (upper half), and an excursion to a farm (lower half). The tree, house, barn, with its interior, the dog's grave, and the child sliding down the hay, are all shown. The morning these pictures were drawn, the children had learned to write the word *farm*. One child wrote the word all over the picture she had made; she seemed to feel that the written symbol completed the story. To secure free expression, we used black crayons, large sheets of paper; for color, the three-color box, with black added, and a No. 4 brush.

SECOND GRADE

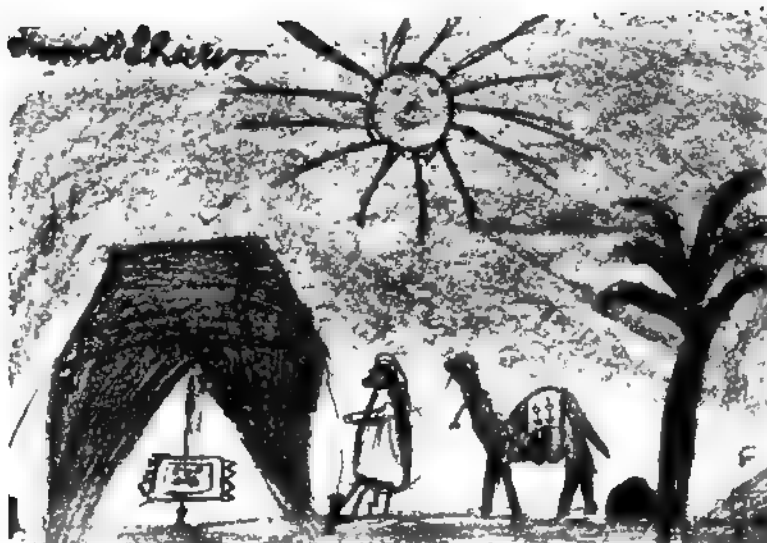
The work of the second grade centers about shepherd life and primitive agriculture. Bible stories of Abraham, Isaac, Joseph, Ruth and Naomi, afford rich background for pictorial material. They unfold varied opportunities for art experiences, such as dramatization of stories, making original poems and songs, primitive dyeing and weaving, sand table stories worked out in modeling, paper construction, painting, and drawing.



CHILD'S DRAWING OF CHICKENS AND

A flock of a dozen chickens belongs to this grade. The daily care of these pets, through good and bad weather, gives motive not only to picture-making but to oral and written expression, such as the daily chicken report given by the committee*. Here, as in the first grade, the story is the principal interest, symbols are still used,

*See *The Care of the Chickens* in Vol. I, *The Social Motive in School Work*.



A DESERT SCENE

but there is more effort to make them like the object in mind. The illustrations show, first, life on the desert, and second, the chicken activities.

THIRD GRADE

The interest in the third grade is still largely that of the story, but there is a much greater attempt to express images as realities. The subject of Norse life leads out into many avenues of expression. The children put all their love of the heroic into their pictures for the books which they made to illustrate the life of the courageous and adventure-loving Vikings. Curtains were needed for the wardrobe in their group room. For the design, the children's cuttings of Viking ships and dragon heads were used as a stencil, which the sixth grade children helped them to apply. The material was unbleached muslin, which the children dyed with onion skins set with alum. We persuaded several grocery stores to save onion skins for us. We used two dishpans full for the ten yards of material, and two lumps of alum the size of an egg for the mordant. The color was a soft yellow. The children, working in small groups with the help of the sixth graders, stenciled the design on the curtains in brown oil paint.

Another interesting problem was the designing of costumes for



STENCIL DESIGNED BY THIRD-GRADE PUPILS

the Norse play which the children wrote and gave. We needed brilliant colors, but found it hard to obtain them; so we bought unbleached muslin and the children measured the material and helped to dye it. Later they applied Norse designs to the costumes. The children gained first-hand experience in color from handling of the materials. For example, when purple was needed, the red cloth was dipped into blue dye. One child, after dipping her finger into the red dye, touched it to her blue apron. She exclaimed, "I've made violet!" The children felt they were inventors, as they saw the red changing into purple.

The dyes used for costumes and for paper tinting are the basic dyes manufactured by the National Aniline and Chemical Company, of Buffalo, New York. They are for cotton only, and are furnished in the principal colors. The materials and directions for dyeing six yards of cloth are as follows:

Preparation of Material. Boil the cloth for several minutes to remove sizing. Dissolve 3 cups of powdered sumac in 3 gallons of water. (Sumac is crude tannic acid of about 30% strength. A corresponding amount of commercial tannic acid may be used, but it is more expensive.) Soak the cloth over night in this solution. Dissolve a level tablespoonful of tartar emetic (potassium antimonytartrate) in 1 gallon of cold water. Remove the cloth from the tannic acid solution, wring out lightly, and place at once in the tartrate solution. Allow to remain for twenty minutes, when it is ready for the dye bath. This process insures a fast color.

Dye Bath.—Dissolve $\frac{1}{4}$ oz. of basic dye in a small amount of vinegar

(acetic acid), as the dye is not soluble in water. Stir the dissolved dye into 3 gal. of water, which has been heated to a temperature of 160° F. Remove the cloth from the tannic acid solution. Wring out lightly, but do not rinse. Place the cloth in the dye bath and stir constantly for fifteen minutes to produce a strong color. If a tint only is desired, use more water in the dye bath. Take cloth out and rinse until free from dye. Dry in current of air if possible.

Lovely colors may be obtained by "topping." After dyeing with one color, for example yellow, dip in red for a moment. This will produce a flame color.

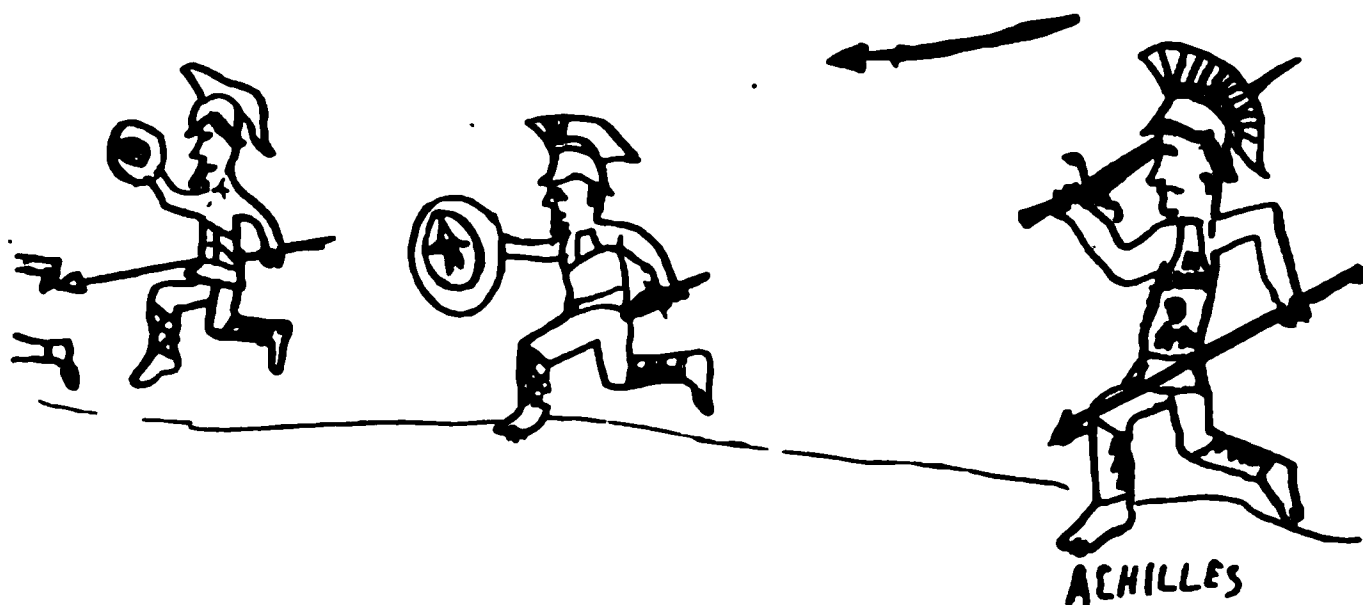
Paper Dyeing.—It is not necessary to prepare the paper by the treatment with tannic acid. Use the dye bath as prepared above and manilla paper. Dip the paper in the dye and dry. This is an excellent way to prepare paper for posters.

FOURTH GRADE

Greek history and stories provide the motive for the study of Greek life, the interest being centered, as in the younger grades, in the story. An effort is made in this grade to secure more careful drawing of the figure, better proportion of objects in the landscape, and a more accurate representation of things as they are in reality. Illustrations made for the note books show the adventures of Odysseus. Greek designs are studied, and this year were worked out on the children's work aprons. This project awakened an interest in design, and a number of the children made original



FOURTH-GRADE DRAWINGS ILLUSTRATING GREEK STORIES



ACHILLES NAME IS WRITTEN UNDER HIM

designs, which they applied as stencils on table covers, runners, and bags. This year the city of Athens is being worked out on the sand table. Against a panorama background in muslin painted to represent the sky and distant mountains, typical architecture, a street scene, and the every-day life of the Greeks will be shown.

FIFTH GRADE

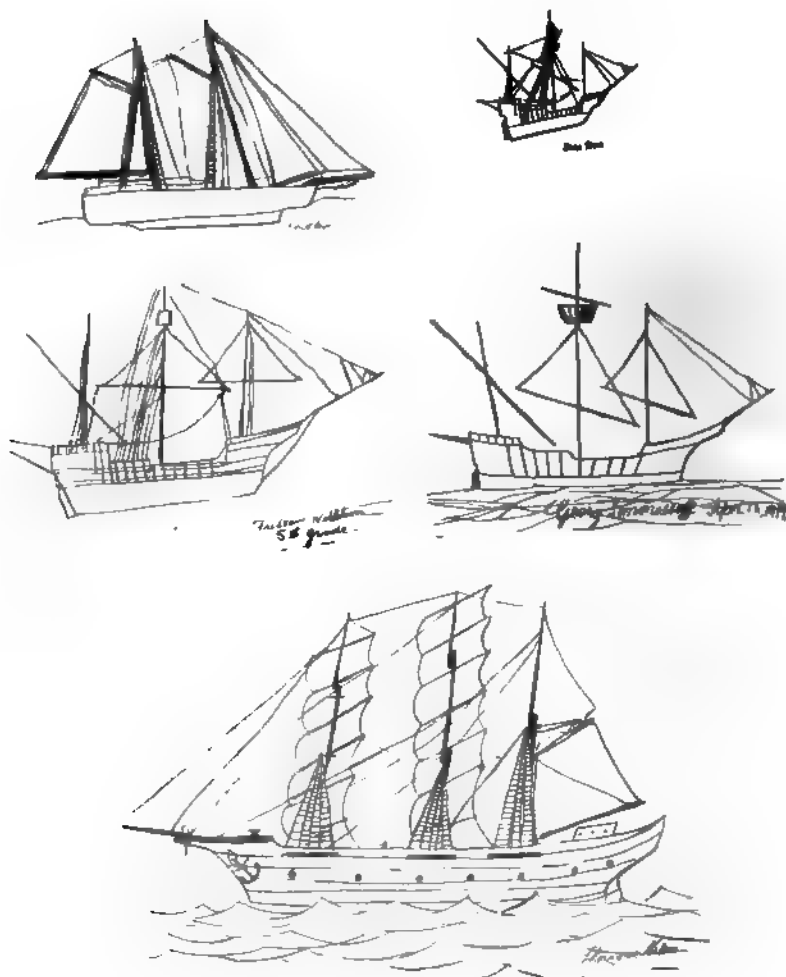
The work of this grade centers about geography, and relates to the period of discovery. Illustrations of travel led to the drawing of ships. Last year a small model of the *Santa Maria* was loaned to the grade. The children's delight in it led to the construction of a number of models of boats. Girls as well as boys enjoyed drawing and making the ships. One of the boys made a large picture of the *Santa Maria*, which was cut as a stencil for the grade banner. In literature, the story of Sinbad offered the material for vivid imaginative pictures.

SIXTH GRADE

The central subject in the sixth grade is history. The life of the hunter, the early trail-maker, and the pioneer offered rich material for picture-making. Stories of adventures with the Indians inspired an interest in drawings representing hunting, the out-of-door life, and the tanning of pelts. The drawing of these activities served to deepen the interest in the subject and to clarify the imagination. This year a series of pictures, representing the life of the hunter, were made for the purpose of illustrating the history notebooks. The four pictures show: a landscape with deer in the foreground; the hunter; the chase; the tanning of the hide.

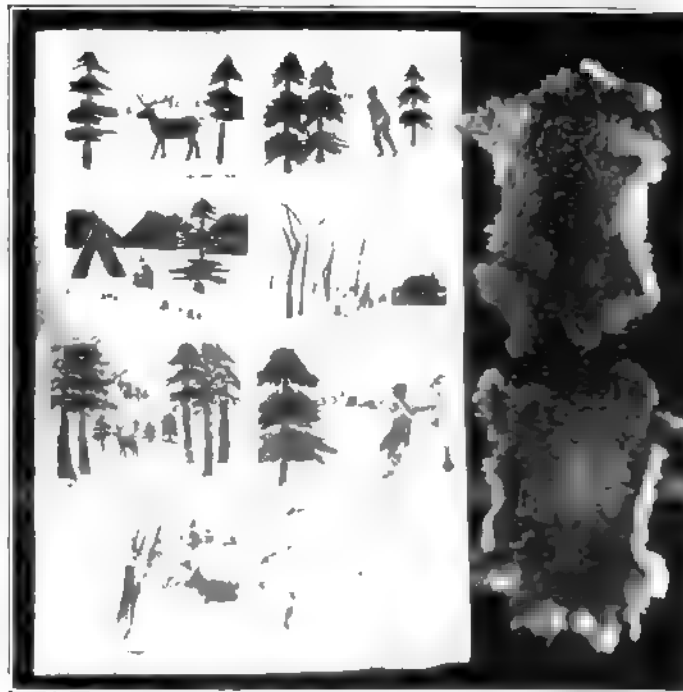


ORIGINAL DESIGNS MADE BY FOURTH-GRADE CHILDREN



FIFTH GRADE DRAWINGS OF THEIR MODELS OF BOATS

The question of tanning came up this year in the art class. The boys brought a number of rabbit skins which we tanned. We used two methods. The first was to soak the skin over night in a strong solution of alum, the following day stretching the skin on a board to dry. After it was dry, we rubbed in neat's foot oil to make it soft. The second method was to use a solution of gambier, which contains a large percentage of tannic acid. We left the skins in this solution for several days, and then stretched them. Both



SKINS TANNED BY SIXTH-GRADE PUPILS AND DRAWINGS SHOWING LIFE OF THE HUNTER

Methods were successful. The experiment has led one of the boys to decide to make a fur cape for his sister's doll. The excellent quality of the children's work in art this year shows the value of the motive.

In literature, last year, the children were reading the story of *Robin Hood*, and had written a play, which they gave. A group of boys asked to make a little model of the play and its stage. We secured a large wooden box and used paper construction. The figures were constructed on wire frames wrapped with paper toweling and paste. They were dressed in crêpe paper.

METHODS AND STANDARDS OF WORK

The art in the six grades is taught with the conviction that all children can learn to draw. We accept the fact that all children can learn to read and write, yet we tolerate a belief that only a few



SIXTH-GRADE BOY IN HUNTER'S COSTUME USED AS A MODEL

possess the ability to express ideas in terms of drawing. The drawing of a picture often completes the expression of an idea for which writing alone would have been inadequate. The true mission of art is seen in its usefulness to each child. While it is true that some children express form better than others, we must remember that others express action and color more readily than form. The line comes last. When children are slow to express, it is generally true that their ability to see and to feel is beyond their power of execution. When free choice of occupation is given, nine-tenths of the children in the third and fourth grades choose drawing and painting.



MINIATURE THEATRE CONSTRUCTED BY GROUP OF SIXTH-GRADE BOYS

In the first three grades, no criticism is given the child from the standpoint of form. Children criticize one another's drawings more fairly than can an adult. It often happens, however, that a child, finding that his symbol fails to explain his idea, asks for help. Then, and not until then, is help readily given by the teacher. This is done at the blackboard. For example, if a child needs to know how to draw a horse, we begin together and get the line of the back first, doing this several times to gain freedom. Then the rest of the animal is quickly sketched. While this does not secure perfect results, it gives the child confidence in the possibility of making the symbol correspond with his idea. In the fourth, fifth, and sixth grades images are not so fleeting as in the earlier grades, and the children are willing to work a longer time on one picture. During this period a greater effort for accurate mastery of form is possible, since abstract technical work is worth little and makes art drudgery. The study of the figure, unrelated to experience, is mere labor. It is through the ideals which result in the expression of the finer feelings that art has its real function, and we attain to this standard when we recognize the inspirational nature and opportunities of the subject.

THE UPPER GRADES

"The proper study of the central subjects will present opportunities without number for the expression of thought through the conceptive modes of expression. There is indeed no limit to the opportunities, and every effort may be made a means of enhancing thought. I believe that these facts will be granted on the part of every one who understands the relation of art to the discovery of truth"

FRANCIS W. PARKER, *Talks on Pedagogics.*

While the method here suggested is a most natural and economical way to teach any subject, I find especially that drawing and



MAGIC SQUARE DESIGNS SHOWING THEIR APPLICATION TO ART-ROOM FURNITURE

ing become more vital if correlated with other work in which children are interested. One or two illustrations will serve to state the freedom of correlation which is true of almost all of the work in this school.



ART-ROOM CHAIR DECORATED WITH MAGIC SQUARE DESIGN

The eighth grade boys were making posters for the use of the school department in "Better Speech Week" in the school. After

studying the human figure in silhouette from life poses, the pupils made use of their ink sketches for the posters by enlarging, composing, and lettering them. The girls of the same grade planned to make new curtains for their room. With this motive in mind they sketched and made cuttings of flowers, studying color and arrangement in relation to the color of the walls and furniture of the room.

The ninth grade has painted and decorated the desks in the art room to harmonize with the walls and screens, and with the chairs, which had been previously decorated by another class. This demanded much work and study of general problems of design as well as their application to the room and its furniture. The desks were taken to the shop and painted under the direction of the teacher of manual training. The decorative designs were based on lines of the Magic Square.* Here the interest and help of the teacher of mathematics gave the pupils a constructive basis for design, and stimulated a fresh interest in it.

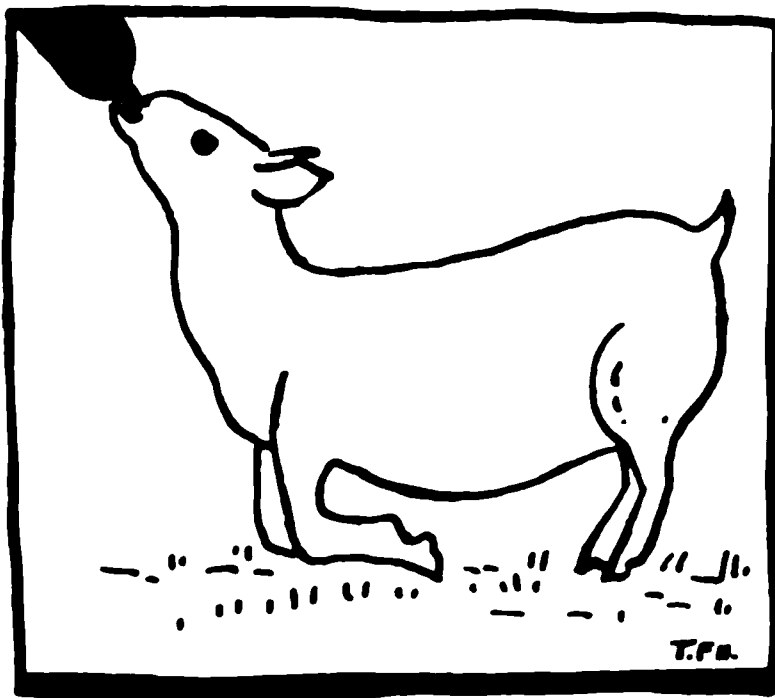
The children of the fresh air room, who own a pet goat, have written the story of his life and are making a book with many illustrations. It is called "Billy's Autobiography." The pictures made by the children show Billy traveling, writing, reading, playing, and eating. Billy himself came to the art room—although it is located on the third floor—to superintend the work. After the illustrations were made, they were painted with asphaltum on zinc plates by the children in the art room. From there, they were taken to the print shop to be etched in acid and printed. The children did this work under supervision of the teacher of printing. They are now designing a cover which will be suggestive of the contents.

The twelfth grade, who in their English course are studying the drama, come to the art room to plan stage settings, furniture, and costumes. When they have made satisfactory drawings, plans or paintings, they go to the shop to make the furniture they are to use in presenting their plays, to the home economics teacher to

*The Magic Square is of ancient origin. It is an arrangement in the form of a square, of numbers which when added vertically, horizontally, and diagonally give the same sum. The Magic Line, upon which the designs are based, is a line drawn connecting the consecutive numbers in any of the many Magic Squares. Albrecht Dürer put in his etching called "Melancolia" a most remarkable Magic Square of 4. In India the Magic Square is the basis of a design on the gate of the fort at Givallor and was often used in decorations on balconies and doorways, as well as in the ornamentation of garments.

make their costumes, and finally to the stage to produce the play. The varied types of work in the building up of the final effect, and the co-operation of the different departments in the common cause, greatly enrich the whole project.

I could go on and on giving instances in which the art work is part of the actual substance of the work in other departments. But the principle controlling all of these instances is the same. The correlation must not come in response to an artificially worked up demand, but must come as the necessary means of dealing with a real situation. If this is the case the value and interest of it for the children are without question, the motive for design—whether it be sawing, painting, sewing, reading, dramatizing, singing, or any other form of school activity—is sustained by a vital and lasting interest, and good technique, demanded by the purpose of the project, is gained easily and joyfully.



BILLY AT LUNCH

MUSIC MOODS IN PASTEL AND CHARCOAL

Beauty and its all-absorbing, fundamental experiences and expressions are surely essential to a well rounded life. Acknowledgment of this truth leads to the conviction that into the lives of children while they are growing should be poured a great store of opportunities for varied aesthetic experiences. Especially is it important to open the way for such experiences before the more formal technical work has crystallized into a habit, before it becomes next to impossible for the children to forget for a moment the conventional expression of an acquired technique.

When this basic experience is not provided early in children's training, a superficial type of thought often becomes their fixed habit. In such cases honest expression of individual mood never becomes articulate; consequently the child's actual expression loses power and beauty by submission to commonplace standards. Insincerity is encouraged, and the child's development of power of observation, perception, and expression is limited. If aesthetic experience is presented so that the children are quite free and all are interested, they will have no fear of seeming strange and they will feel that it is desirable and that it is a privilege to express their deepest feelings.

This belief, and the privilege of freedom in planning my course of study and of adapting it to the needs of each and every one, gave me the idea of presenting to my high school classes the following experience. A class of twenty high school boys and girls, with some appreciation and skill in drawing and painting, were invited to hear some beautiful music. I had consulted the Music Department and had listened to many piano compositions before selecting what seemed to me the most stirring and suggestive of all the subjects offered—one with a theme or pattern which might awaken the imagination and give the children a vision. I put paper and colored chalk within reach of the pupils, and told them that they might draw, if they felt like it, after listening to the music, but I especially emphasized the fact that they need not do this unless they desired to. They were to listen with a sense of leisure and with all possible joy, and to feel entirely free.

This group of pupils had studied design for one year and had been given opportunities during that time to experiment freely both in making original variations with assigned subjects and in working out their own ideas. They also knew something of the science and symbols of color. They were told that it was as natural a process to convey one's impression of a beautiful, harmonious sound as to convey one's impression of any beautiful material thing, such as a flower, a face, or a landscape.

Claude Bragdon says in his *Architecture and Democracy* that there is a great difference between music and color as art mediums: that music is a "seeking," while color is a "finding"; that one finds a prolonged musical note intolerable, because the ear demands change and variation; while on the other hand, because the eye calls for repose, one can enjoy a clear blue sky all day and every day. Notwithstanding these contrasting forms of experience derived from the two mediums music and color, there is a certain unity in their emotional appeal. It is possible to give some expression of the effect of one in terms of the other. This process is valuable to those who have made a study of it and who use it or guide it with wisdom.

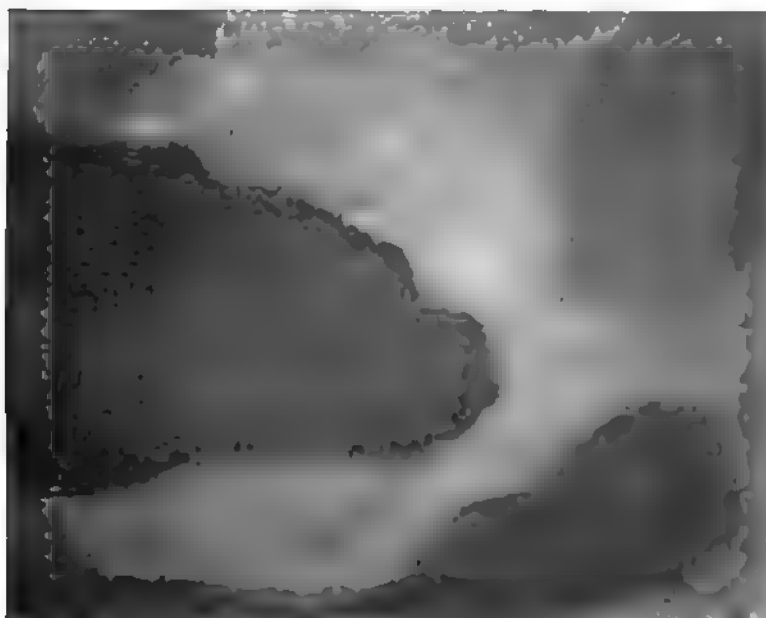
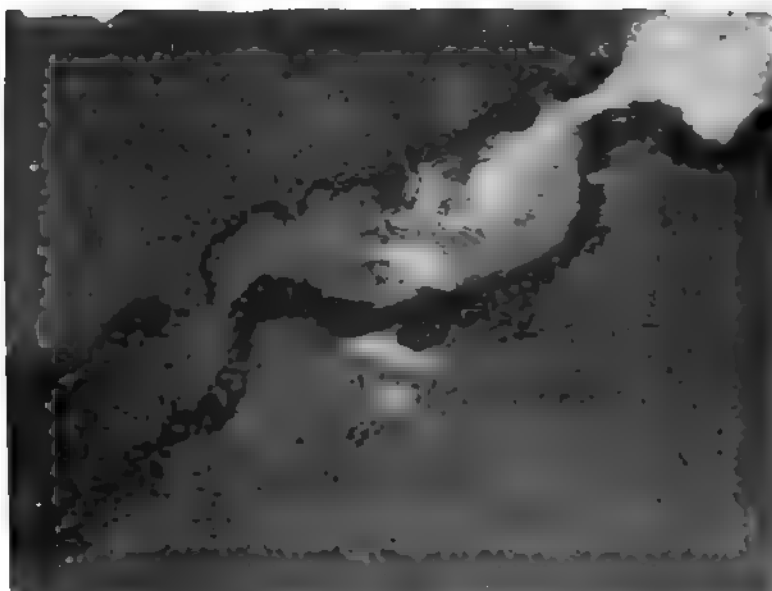
The musical impressions worked out by these pupils were put on a screen in the art room and left there several days, for enjoyment, but not for criticism. They were so varied that there was little temptation to make critical comparisons. I often heard remarks like the following: "L. felt entirely different from C. Just look at her heavy, rich coloring, while his is quiet, in purples and blues." These simple, direct mood drawings are very interesting in color and composition, and many of them possess real beauty. They are precious in a very particular way, for they reveal unrealized qualities and powers in each child. Moreover, after such an experience, pupils invariably express themselves more freely; they seem to have lost fear and restraining self-consciousness; even the most sensitive ones gain confidence. The opportunity to express music moods in color should, however, not be permitted often—possibly only two or three times a year. After the first time it seems better to wait until the pupils ask for another opportunity. The experience gives such keen pleasure that this request is almost sure to come.

I have found that this kind of experience possesses certain definite values in art education. It calls forth a true expression of each child's individuality and mood. It helps to cultivate discrimination,

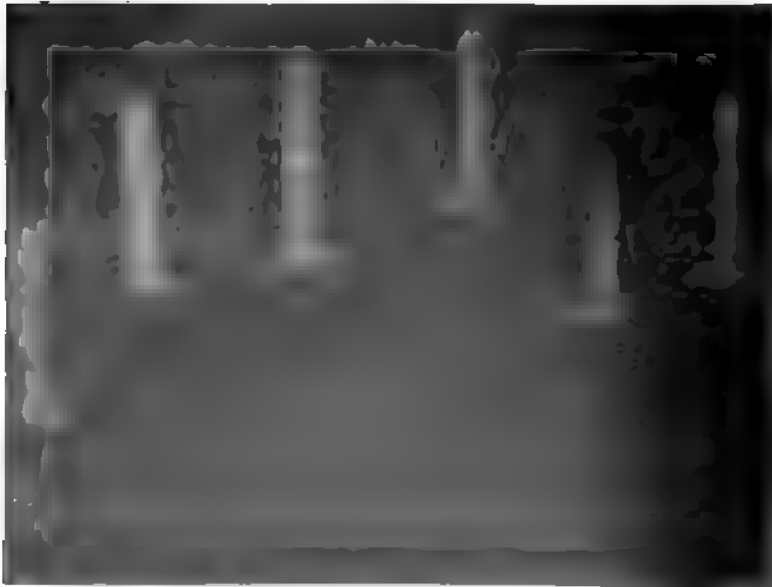
taste, and appreciation of the different kinds of art. It marks beginning of a feeling for the beautiful in its essence, whether be expressed in abstract design or in the representation of natural familiar forms. And it never fails to teach that art is the expression of self through form or color or other medium, rather than mere a reproduction of nature or life.



STUDY IN DESIGN BY FRANKLIN G. MINOR



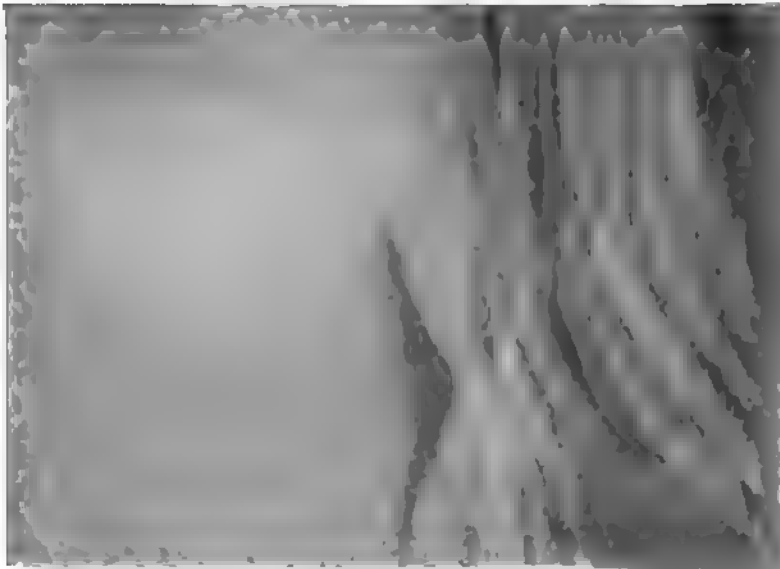
BACH ALLEGRO FROM TOCCATA IN G



THE HOWEN, THE ME AND ALLEGON, I. SOGATA IN A FLAT



SCHUMANN—SECOND ROMANCE



LISZT—CONCERT ETUDE IN D FLAT

DALCROZE EURYTHMICS

"It is encouraging to remember that many of the educational ideas which germinated in the years preceding each earlier period of European war survived the time of struggle and proved their vitality in the following age of reconstruction. Comenius, though himself a victim of the wars of the seventeenth century, influenced by his writings the educational outlook of a later age. Rousseau and Pestalozzi leavened the school practices of the nineteenth century. And the methods of Jaques-Dalcroze, though for the time checked in their more extended application by the calamities of the war, have taken firm root, and with the help of those who are now fostering and developing them in England will have strong influence in the educational movement which promises to follow the restoration of peace."

M. E. Sadler, *The Eurythmics of Jaques-Dalcroze*, Introduction.

The introduction of Dalcroze Eurythmics into the Francis W. Parker School, with its full and varied program and unusual number of special features, compels an analysis of its operation and aims in order to prove that it does not trespass upon the work of the well established departments of physical education and music, and that it has a value of its own which warrants its inclusion in a crowded curriculum.

Only one branch of the method as taught by Emile Jaques-Dalcroze is given in the Francis W. Parker School, namely, rhythmic gymnastics, or "the corporal study" of musical rhythm. The other two branches of the method, ear-training and improvization, are not included in the work now given to the first four grades and the freshman girls.

Eurythmics belongs in the domain of pedagogical gymnastics, but it includes, as well, fundamental musical education. It was his search for better methods of musical education which led M. Jaques-Dalcroze to the discovery that the sense of rhythm and measure could be developed by movements of the body in time to music; that "there is an intimate relation between rhythm in sound and rhythm in the body."

The division of time in music into pulses corresponds to equal divisions of space. To illustrate this by stepping, marching, running, leaping, springing, or skipping, according to the tempo and rhythm of the music, is the first lesson in rhythmic gymnastics. Free movement governed only by music, and the habit of attention, are

the points to be gained by these first exercises. The music, in order to compel this attention, must be improvised by the teacher, changing frequently its accents, tempi, and quality of tone. *Accelerando*, *ritardando*, *crescendo*, *diminuendo*, the different touches, are all capable of expression by the body in quickened or retarded movement; in inhalation and exhalation accompanied by muscular tension and relaxation; in erect, tense, contracted, or relaxed positions of the body while marching.

The infinite possibilities of this kind of exercise will not be apparent to one who thinks of rhythm as a monotonous, metronomic regularity of beat, like the ticking of a clock. Jaques-Dalcroze lays emphasis upon the great variety of musical rhythm—rhythms forgotten by the composers of the so-called classic period. Changes of measure, unusual times like $\frac{5}{4}$, $\frac{7}{4}$, $1\frac{3}{8}$, etc., are studied, as well as more common kinds of measure; syncopation, phrasing, also counterpoint, canon, fugue, three against two, and three against four.

Measure is taught in the Dalcroze method by beating time with the arms, as a conductor leads an orchestra. The first beat of a measure, the down beat or strong beat, brings the arms down to their full length, with a contraction of all the muscles. The remaining weak beat or beats are made by extending the arms with a stretching movement to the side, forward, or upward. This muscular contraction, expansion and relaxation, dividing space, is a very apt illustration of rhythm, which is defined by Webster as “a dividing of time into short portions by a regular succession of motions, impulses, or sounds.”

Inhibition or spontaneity exercises, in which a movement which has become automatic is checked on command or is changed to another movement, were introduced into his system by Jaques-Dalcroze upon his discovery that the movements designed to be executed to music were performed by the majority of beginners either a little too late or too soon. To overcome the resistance which produces the one fault and the lack of control and balance which causes the other, these exercises are given in each lesson, increasing in difficulty as the pupils attain greater physical and mental control and co-ordination. Thus *hearing*, *thinking* and *acting* become one three-fold process, as the elements of friction, inaccuracy of hearing, slowness of thought, nervousness or awkwardness, are eliminated. The mere checking or inhibiting of an action is of no value except as it is accomplished with perfect ease, in

ordered rhythm, without confusion or discomposure.

A tremendous power of co-ordination is demanded by the combination of arm motions (for beating time) with marching and accent. All note values, from the fraction of a beat to a whole note of twelve beats, must be learned as one learns the alphabet or the multiplication table. These note values are illustrated by steps corresponding to the duration of sound of the note. Thus a quarter note is a step to one beat of the arms; eighth note, two steps to one beat, etc. Half notes are represented by a step on the first beat and a bend of the knee on the second beat; dotted half notes, by a step and two points with the free foot, while three beats are made with the arms.

"The realization of rhythms," as it is called in rhythmic gymnastics, is literally to make real or visible in movement a musical measure or phrase which is being heard by the pupil. This rhythm may be one, two, three, or four measures long. It may be played several times before the pupil is able to realize it correctly, but later the pupil will be able to realize, after one playing, and will form a canon with the piano, realizing each measure after it has been played without pause, hearing the second measure while realizing the first. This form of canon is called "a realization chain."

Beating in canon shows dissociation of the bodily members by beating with one arm four-four or any number of beats, coming in with the other arm one or more beats behind. This independence of movement is also shown by simultaneously beating three with one arm, four with the other, two by moving the head down and up, and five by stamping the feet on the first of every five steps.

Equipped with bodily control, with the capability of "responding to artistic rhythms and realizing them quite naturally without fear of exaggeration," the pupil finds his vocabulary of movement ready to use in expressing himself. M. Jaques-Dalcroze writes: "The result of this education ought to be to put the completely developed faculties of the individual at the service of art and to give the latter the most subtle and complete of interpreters, the human body. For the body can become a marvelous instrument of beauty and harmony when it vibrates in time with artistic imagination and collaborates with creative thought."

The centennial of Geneva, Switzerland, July, 1914, afforded an opportunity for the world to see and judge of the place of eurythmics in art. The first act of the *Pièce Historique*, of which Jacques-

Dalcroze was the composer, depicted the soul of mankind during the various epochs of the history of Geneva up to the date of its confederation with the Swiss Republic. Not ballet nor pantomime, but infinitely greater in its power than either of these, was the movement of these large groups of gray-clad figures, two hundred or more rhythmicians, on the vast stage of Greek design. Beginning with the gradual appearing on steps at either end of the stage of the Hours and Bells of the night, the action, accompanying the music of orchestra, chorus and soloists, portrayed the barbarity of the Helvetians, the Roman civilization, the Burgundian epoch, the Geneva of the franchise, the construction of the city, Geneva of the Duke of Savoy—might against right,—the revolt against oppression, the reform under Calvin and the new faith, L'Escalade—liberty resisting the last attacks of treachery,—a tribute to Jean Jacques Rousseau, and the Revolution. After this climax, the music gradually became calmer until, amid the ringing of chimes, the Hours and Bells of the night remounted the steps and disappeared.

It is not the purpose of this article to enable readers to use the ideas of M. Jaques-Dalcroze in teaching eurythmics. "Rhythmic Gymnastics," he says, "is above all a personal experience." The most expert musicians have signally failed in teaching eurythmics until disciplined by the personal test of proving their understanding of rhythm in bodily movement; the most expert dancers have a still more difficult musical education to experience before arriving at the understanding of what eurythmics means.

A normal course of at least two years, including all the branches of study—sol-fège, improvisation, rhythmic gymnastics and plastic—is absolutely essential to enable any one to teach the Dalcroze method of eurythmics. This year, for the first time, such a normal course may be studied in America at the New York School of Dalcroze Eurythmics.

The writer aims in this article to state, honestly and plainly and without undue exaggeration of its favorable features, the results of three years' teaching of eurythmics in the Francis W. Parker School. After these years of experience she feels justified in stating that in spite of personal mistakes and certain unfavorable conditions there have been interesting, desirable, and valuable results.

In the first grade the child's natural instinct for expression in bodily activity is used to teach the habits of attention, self-control,

Spring up oh well, sing ye unto it, we will sing and dance, joyfully unto

At, we will dance unto it, we will drink with joy, we will dance and sing

-I, love ye oh well.

Marjorie

We will dance and sing unto it, we will drink with joy and dance, we will

dance and sing-I love ye oh well.

-Eugene

Eugene

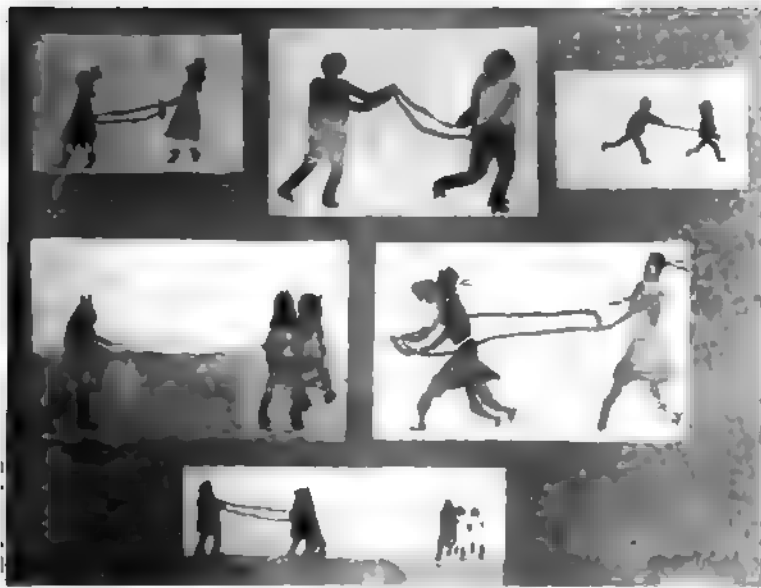
and rhythm for the soft-footed, slow-moving camels, who were all the little boys of the second grade. The maidens, carrying water jars on their heads, were represented by all the little girls. The children's spontaneous expression of joyous, rhythmic movement made the performance true art, indescribably eloquent and religious in feeling. The music for shepherds was a pastorella of Scarlatti, which the children love and which certainly helped to arouse the charming expression which they gave in the original songs they composed to express the shepherd's joy in finding water in the desert.

The regular fourth grade work is a study of Greek life, and eurythmics has here a logical and necessary place and gives the true Greek feeling as no other subject in the curriculum does. The study of rhythm continues in exercises of free and controlled movement, unusual measures of five and seven beats, ball games, discus throwing, spear throwing to music, as well as polyrhythmic studies like "The Horses," in which horses and drivers march in different note values, the horses always twice as fast as the drivers.

The first fourth grade which studied eurythmics worked out a Greek festival to the goddess Demeter, which was given as a prelude to the play of *Pandora*. The festival began with a dance of flower girls, then came a procession bearing fruits and flowers, lyres, flutes and cymbals; after which charioteers exhibited their skill with horses. The crowning of the most expert charioteer with laurel made the climax of the festival, and the procession moved off. The most important result of this experience, aside from the musical and physical development and aesthetic joy, was seen in a remarkable increase in the technique of painting and drawing. The opportunity of making a picture of the procession was eagerly seized upon several times before the children were satisfied with their achievement. The results were paintings and drawings which by their unusual animation and excellence have aroused interest wherever shown.

This tendency of eurythmics to enhance art expression in drawing and painting has been so noticeable in all the grades that further experimentation has been planned by the art teachers to prove that this kind of rhythmic experience should be a fundamental part of art education.

Eurythmics is given to the girls in the freshman year of high school. The first group continued their work a second year and demonstrated the results which are claimed for it—quick response



PAINTINGS BY FOURTH GRADE CHILDREN ILLUSTRATING THE "HORSES"

to rhythm, control, balance, poise, beauty, and grace of movement. A plastic study of a Crescendo, a composition of Schumann, and of a Bach invention were interpreted in movement in a morning exercise.

Eighth grade boys gave a ten minute demonstration of eurythmics at the National Convention of Physical Educators in 1919, which excited much favorable comment. Their program consisted of exercises for developing spontaneity of will, co-ordination, concentration, initiative, and mental and physical control. These exercises were executed to music improvised by the teacher. In one exercise the movements of the group were directed by one pupil with a baton. In the last two numbers the music and movements were memorized, one being a rhythmic study showing muscle tension and relaxation, the other leaping and jumping in time to music. Thus the program was designed to show, first, that Dalcroze Eurythmics aims to develop the individual toward his fullest capacity for living, and second, that, as the Greeks also believed, music is the indispensable medium for such education.

This fourth year in the Francis W. Parker School shows results

more clearly than any previous year. Eurythmics is seen to be an education which trains ear, mind, and body, by means of the universal instinct for expression through bodily activity. President Eliot of Harvard writes of it: "The Dalcroze Method is a strong case of teaching through action on the part of the pupil." It illustrates Colonel Parker's saying that "all education comes through self-effort." To quote again from Colonel Parker, "Music cultivates the emotions which determine the motive and control the will. Rhythm, the basis of all melody and harmony, is a powerful means for the adjustments of the body in graceful, subtle movements, thus rendering it a more and more perfect instrument of the soul." A sentence written by Jaques-Dalcroze in his latest book, *La Plastique Animée*, completes and fulfills the requirements of Colonel Parker. "It is our intention to establish by the study of 'rhythmic' an intimate alliance between the physical and artistic faculties and to make music in its infinite variety of nuance, dynamic and rhythmic, serve to educate that musical instrument par excellence, the human body."

In reviewing the progress of Dalcroze Eurythmics in America, it is well to remember that until Jaques-Dalcroze personally conducts performances of his work little can be known of the beauty and wonder of his demonstrations in Europe. Europe, up to this time, has been the only place where this education could be obtained, and Jaques-Dalcroze is the inspired originator whom no one as yet can equal. What has been done up to this time is little more than a paving of the way for the genuine recognition which is due to this great educator. It is to be hoped that such recognition will be manifested in the establishment of institutions in this country like those already existing in Geneva, London, and Paris, where courses in eurythmics are given to parents, teachers, musicians, dilettanti, professional artists, writers, doctors, and actors, as well as to children and normal students. Such institutions should afford the opportunity of studying the Dalcroze Method as a whole, including solfège and improvisation, both as yet unknown to this country. The willingness and readiness of Americans to welcome any good thing in education and music make it certain that M. Jaques-Dalcroze will find an appreciative and sympathetic reception for his ideas.

SPECIAL VALUES IN PARKER SCHOOL EXPERIENCE: ALUMNI IMPRESSIONS.

NOTE: We hesitate to print these two articles from two school alumni, one of whom was graduated in 1910, the other in 1917. A few months ago we asked each graduate for a letter answering the following questions:

1. Do you consider that anything in your experience at Parker was especially conducive to training in good citizenship?
2. If so, what, in particular, has proven useful to you as a member of a larger community?

Many of the letters received in reply mentioned features of school life which illustrate the subject of this volume. We have chosen two for printing here. While almost all of the replies emphasized the points brought out in those two letters, their authors were not all so optimistic. Several told of difficulties they had encountered because of the failure to realize during their school experience the need of absolute accuracy in all their work. Others said that in our freedom there was not enough strong guidance. They have made us realize many of our inadequacies; they have made us take stock of our practice in relation to our theory. Moreover, we are of course aware of the fact that much of the rare quality in certain young people who have gone through our school is inherent, and not the product of organized education.

In printing these two letters, therefore, we protest that we are not saying, "See what we have done!" We are simply giving the impression of two sincere critics of the school who know it well because they have spent many years in it. The vividness of certain experiences has stayed with them. Certain habits of thought have grown up in them. Their statements may give to the reader a new viewpoint upon some of the work which we have tried to make clear in this book, and which is after all better experienced than talked about.

SELF-COMMAND

Training in self-command, in my opinion, is what the Parker School most richly contributes to its pupils and to their power of being good citizens. I do not mean merely self-control, for that is essentially negative: I mean self-command in doing, even more than in not doing. Such self-command includes the power to see what ought to be done, to devise the means of doing, and to have the force, courage, and persistence to do and to continue to do until the end is accomplished. Such self-command is not only a moral quality, it is also intellectual.

Training that develops self-command is so subtle that it is difficult to explain the means by which the Parker School accomplished it. We were taught to see the value of our study and to make ourselves study without being compelled. In every matter of discipline we were not made to do or not to do; we were brought to see the wisdom or the rightness of doing or not doing and to command ourselves to do or not to do. Thus we were helped to want whatever was right, to think out for ourselves what the right was, and to be able to bring ourselves to live up to our own thinking. We were not even told explicitly what to do or how to do it, in our work or in our play. In a history course, I remember being allowed to choose the subject of most interest to me to write a long theme upon, and having chosen "The Nautical Instruments of Columbus," I asked where to read about them and how to get the material together. I was given the teacher's library card and told that I could probably find what I wanted at the Public Library. The rest I was left to work out for myself. We were not given short lessons from a textbook which we could almost memorize, but we were given the opportunity of discriminating between the important and the unimportant material. In physics we performed experiments before reading in the textbook the principles to be illustrated. In manual training we were not given a set series of plant labels, blotter pads, broad swords, etc., to make, but we were left to design our own manufactures. Even when we undertook to build boats and automobiles the teacher did not discourage us, though he admitted at the start that he knew little about them and knew of no place in which to build them. Though possibly we did not learn as many facts as pupils in other schools, or pass such high examinations, we did learn how to find out facts, how to discover and use opportunities, how to act on our own responsibility.

In college, when given subjects for theses with the library before us and no other assistance to be had, when conducting experiments in special fields where the way was not mapped out; in law school, where cases and not textbooks are given, and where examination questions do not relate to settled rules or principles; in business or professions, where nearly every contingency that arises brings problems that have never been fully solved before; in all these, it is not so much accumulated knowledge that counts, as the ability to know how to work things out from the sources on the known principles, or somehow to feel them out from the facts themselves.

If one can thus work things out and has learned to like to do so, his education in schools is just a beginning for the education of life. Each new experience will add to his sum of knowledge, and in the end his accumulated knowledge will be larger than that of people who learned more facts at school but did not learn so fully either how to learn or the joy of learning. More than mere ability, the methods of the Parker School give the power and the habit of choosing for oneself to do the right, of determining what that right is. This alone makes ability and the possession of knowledge of true value to the individual and to the community in which he lives.

POWER TO THINK AND TO ACT

It is the innumerable things I was allowed to work out for myself at Parker that have remained most vivid in my mind. For example: when I saw the mouth of the Mississippi River for the first time, I knew in what stage the delta was, what was happening to it, and what probably would happen to it, not because I had read about it in a book, but because I remembered just what happened to the delta I had built in the sand table in the fifth grade, and had watched and experimented with under all sorts of conditions.

Since my days in fourth grade, I have had an admiration for ancient Greece and her culture that I am certain I never could have received from the printed page alone. For weeks in fourth grade we dressed like Greeks and acted like Greeks; we even thought like Greeks. Socrates was a very real man to me, and the details of the Trojan war I followed with anxiety. We listened to the adventures of Odysseus with feverish excitement. In our modeling classes we made, for the decoration of our room, friezes which we designed in our art classes. I knew and loved every corner of the Parthenon. Going to the Art Institute and seeing statues of Athene and Hermes was like meeting old, respected friends.

My work in the clay room has not made a sculptress of me, but it has shown me the difficulties of the work and taught me to appreciate the work of others. Nor has my work in the art room made a great painter of me; yet this work, particularly our attempt at interpreting music by line and color, gave me an entirely new point of view about art. The hours spent in music have not given me a glorious voice, but they have taught me to love the best in music.

I shall always remember the senior class play as a wonderful experience. Before my senior year, a play I saw at the theater fell into one of two classes, a play I liked or a play I didn't like; that was as far as I thought the thing out. However, after we had studied the history of the drama, seeing for ourselves how the number of acts was gradually reduced, how the monologue fell into disuse, how the exposition became more subtle; in short, after we had learned to appreciate the technique of modern drama, I began to look, in the plays I saw, for things the existence of which I had never realized. Then, after we had given our own play, *Cathleen ni Houlihan*, the stage setting and action in every play meant something to me, because we had tried to work out these problems ourselves.

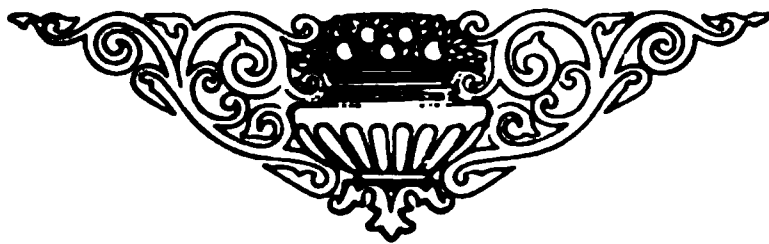
The secret of our all being so interested in what we were doing, I think, lay in the fact that what we were doing was usually so closely connected in some way with what was happening in the world. School was not a secluded little haven into which one withdrew for the purpose of becoming educated, but was a part of the living world. Our choice of plays, songs, art work, often had direct bearing upon some all-absorbing subject of interest in the world.

In learning to understand our surroundings, however, we were never given predigested ideas about them. We were taught to observe what was around us and to form our own opinions. I feel that the power to think for myself is perhaps the most valuable thing I have gained out of my twelve years at Parker. I believe the best equipment in life is the power to think for one's self. We were always encouraged at school to have our own ideas. In our geology work in the eighth grade, we took many field trips, made our own observations, formed our own conclusions and then wrote our own records. If, in mathematics, some one thought he had found a new method for solving a certain problem, and got the correct results, he was welcome to use his own method. We were given power to think rather than fixed ideas.

Just to have your own ideas, without the power to act on them, is to be of little social value, but every child at Parker has had the school word, "Responsibility," held up before him from his first day at school. The varied school activities, the printing of the *Parker Weekly* by the children, and the conspicuous absence of fixed rules,

are proof of how well this great word is understood and appreciated.

In short, I believe that the school teaches us how to understand the things about us ; it trains in us the ability to form our own ideas about them, and the power to act upon those convictions ; and in setting before us certain ideals which will guide us in our actions, it truly prepares us to be worthy citizens of the world.



BRIEF SUGGESTIONS FROM SCHOOL EXPERIENCES

Fragmentary notes of certain activities and incomplete experiments in the school, which illustrate the principle of flexibility in schedule and curriculum, are given here in the hope that there may be something suggestive in them for other schools. Certainly, in every school there are unrealized opportunities for the widening of experience.

THE TOY SHOP AND THE SCHEDULE

There is value for children in working for a larger community than the grade or school community for which they usually work. This is the motive which prompted the establishment of the Santa Claus Toy Shop,* in which, each December, hundreds of old toys are repaired, to be sent to children who otherwise would lack Christmas gifts. This year the work was done as a school project, in school hours, instead of as an after-school piece of work performed by conscientious volunteers. The result was a great increase in output, including the making of hundreds of new toys.

In order to accomplish this, the schedule of the entire school was changed. For two weeks preceding the Christmas recess, all gymnasium classes and handwork classes were given up. A special schedule was arranged, which for these two weeks brought all of the academic work into the morning hours. The afternoons were reserved for the rehearsal of Christmas music and for the Toy Shop. From noon on, the school was no school in the accepted sense: it was not a place where children were reciting and studying the approved subject matter of an academic course of study. It was a factory, producing four thousand toys in two weeks' time. Every child above the second grade was a worker in the factory, having his hours of work recorded and receiving his pay at the end of the two weeks in the currency described in a former article on this subject.* No overtime work was done except by the high school and faculty foremen.

The advantage of this plan for the Toy Shop was that every member of the school made a real contribution toward filling the

*See *The School Shop and the Christmas Spirit*, p. 21, in Vol. I, *The Social Motive in School Work*.

needs not only of the small school community, but also of other institutions, and of individuals who are victims of the present social order. The school authorities felt that the educative results of the plan justified the task of rearranging programs.

THE STUDY OF CURRENT INTERESTS IN THE HIGH SCHOOL

The school believes that high school children need as vivid, accurate knowledge as is possible of the affairs and events of the world. For the last two years an experiment has been carried on in the high school for the purpose of enabling all the pupils to have one period a week for a more complete discussion of current events than can be made by casual reference in occasional classes. Six groups were organized to study current problems, and the pupils elected their groups according to their interests. There are groups in current events, in political and industrial science, in music, in art and in current literature. There has been some outcome of the work in morning exercises. Some high school boys, who met weekly in a current events group, were interested and somewhat bewildered by the extravagant contradiction and accusations which were made in discussions of the Russian situation. With the help of the faculty leader, these boys examined much of the literature that had been issued by friends and enemies of the Soviet government. In a morning exercise, they presented the result of their work to the school, giving, without partisanship, an outline of the Russian form of government, and the arguments advanced for and against it. The result to the school was of course not measurable, but surely it is healthy for the children to hear from their comrades clear, fair, illuminating discussion of a topic usually befogged by prejudice and misunderstanding. The art group has planned an exercise to illustrate the tendencies shown in the work of modern American artists. The music group is collecting material from a number of magazine articles on the subject of war-time music. They discussed community singing and other points of current interest in music, especially the perennial and ever-burning question, "what is good music?" The natural science group has made excursions into the park to study the flora of the neighborhood. In the article on *Adaptation in the Content of High School Science* in this volume, the work of the industrial science group is discussed. Many of the groups have not given morning exercises, but it is the object of this work, done in school time and included in every child's pro-

gram, not only to contribute to the child's knowledge, but to quicken and intensify his interest in the life of the world at this stirring and complex time.

INDIVIDUALITY RECORDS

How are we to know the needs and capacities of the child, if there is no means of recording them from year to year as he passes through the school? Dr. Adolph Meyer, of Johns Hopkins University, in an address which he gave in Chicago two years ago, urged that teachers work out a system of school records which "should give more and more a knowledge of the individual child, and home, and gang, and other factors in environment." The need for such records has surely been felt by all teachers who, in planning their course of study, try to adapt it to the needs and capacities of the individual child.

For two years a committee of the faculty of this school has been trying to design a set of record cards which will be economical of time and at the same time not too meager in information to be useful, and which will give the salient facts of each child's environment, special powers and weaknesses, interests, and activities. Uniform with these cards are the physical records of the pupils and the records of their academic standing. When a child passes from one grade to the next, his cards go to the new teacher, who has consequently some knowledge upon which to begin the year's work.

A tentative set of cards was drawn up and copies were sent to Dr. G. Stanley Hall, of Clark University; Dr. Adolph Meyer, of Johns Hopkins University; Dr. Frank M. McMurry, of Teachers' College, Columbia University; Dr. William Healy, of the Judge Baker Foundation of Boston, and Mrs. Helen T. Woolley, of the Vocational Bureau of the Cincinnati Public Schools. The criticisms and suggestions of these people were of great help to the committee in revising the cards for trial in the school.

Since the cards are being used for the first time this year, and will probably need some changes before the system can become permanent, it is impossible at this time to make any real report concerning them. Mention is made of them here, because they represent an effort at helping teachers to know the children more intimately and to adapt the curriculum to their individual needs.

PUBLICATIONS OF THE FRANCIS W. PARKER SCHOOL

Studies in Education*

Volume I. The Social Motive in School Work.

This volume describes school activities which are controlled by strong social motives. The contents include articles on: *The Spirit of Giving as Developed at Thanksgiving and Christmas; The Setting and Costuming of a Play; Music in the School Community; Original Composition in Music; The School Print Shop; Printing in the Seventh Grade; Care of Chickens; Eighth Grade Community Work.*

Volume II. The Morning Exercise as a Socializing Influence.

In Volume II, the use of the social motive is further illustrated by articles describing exercises given in the daily school assemblies. They show how classroom work in science, mathematics, geography, literature, art, etc., has been utilized. Some exercises are reported verbatim, while in others the method of preparation is described. A classified list of typical morning exercises is given.

Volume III. Expression as a Means of Training Motive.

This volume deals with the place of expression in education. It contains an article on the theory of expression, and other articles as follows: *Play as Fundamental in Education; Oral Reading; The Value, Place, and Use of the Dramatic Instinct in the Education of Young People; Imaginative Writing; Clay Modeling; Metal Working; Making a Rug; The Social Application of Painting and Drawing.*

Volume IV. Education Through Concrete Expression.

The articles in this volume show how the school provides opportunity for the pupils to gain adequate mental imagery as a basis of study, through individual activity and observation, and through personal contact with actual materials. They also show how, through constructive activities and projects connected with the school life of the pupil, the application of knowledge gained is demanded. The work of many grades and departments is represented, accompanied by many illustrations.

Volume V. The Course in Science.

This volume presents the science of both the elementary and high school. Following a statement of the general principles controlling the selection of material and its organization, the work of each grade and high school course is presented separately and completely. Subject matter is fully outlined, including much experimental work, methods of presentation are indicated, and the outcome is made clear by representative pieces of children's work. An attempt is made throughout the volume to show how the work in science may be based entirely upon the interests, activities, and problems of the pupil. Lists of reference books are included and there are numerous illustrations.

*The first five volumes were published as *Year Books*.

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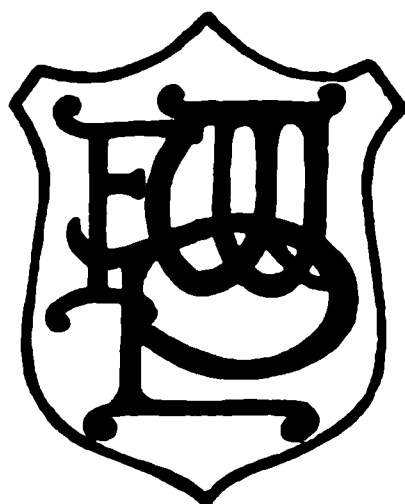
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NOTE

With volume six the title, *Francis W. Parker School Year Book*, was changed to that of *Francis W. Parker School Studies in Education*. Reprints of the first five volumes will bear the new title.

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230 Webster Avenue
Chicago

PREFACE

Some years ago two educated, critical young women visited our school. They had read our *Studies in Education*. They went away, they say, thinking that here was the educational heaven—the children keen, alert, happy, friendly, lovable; the teachers—well, they thought highly of the teachers, too. They seem to have come on a very auspicious day. However, two or three years later these same young women were invited to teach in this school. They say they were disillusioned. They found that the teachers were interested, doubtless, in their work, and reasonably intelligent, but certainly not geniuses. “The way to become a better teacher,” they were told when they were discouraged, “is to teach another year.” These young women insist that the *Studies in Education* are misleading. Reading them, one would think that no mistakes were ever made in our school; that every pupil is at his best at every moment; that the maximum of training of information is attained with every pupil; and that every teacher is always completely prepared and in every respect equal to every situation. Teachers of more experience know, of course, that there are always difficulties and discouragements. That is the reason why thinking people are constantly making experiments in educational methods and in subject-matter; that is the reason for *Studies in Education*: they are not records of perfection attained; they are accounts of attempts to improve on our own methods and to avoid some of our past failures and errors.

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INTRODUCTION

History in modern education is being classified more and more as a social science, and since, in our school, history has always been essentially a social study, we are publishing our history course at this time for whatever it may contribute to the current country-wide movement for a more immediately useful and dynamic curriculum.

The ruling idea in the entire course is that of development—the idea of the development of mankind upon the earth as a continuous process. We would have the children realize that there are in life certain controlling forces, habits, and ideas which throughout the ages have moved civilization forward to noble achievement; and that there are other forces, purposes and types of action, which have held it back and led inevitably to its downfall and destruction.

The basis for the selection of subject-matter for our course is found in the varying characteristics, abilities, and stages of development of the children. Under this guiding principle, some vital period or chapter in the story of human progress, some typical race experience, illuminated with lasting achievement and characterized by high heroic action, is chosen for intensive study in each grade. The problems in each intensive experience demand initiative, invention, creative imagination, and contact with beauty in many forms, and give daily opportunity for varied and satisfying achievement and self-expression.

Thus the knowledge content of the course performs two functions: on the one hand it furnishes an appropriate background for the children's own experiences and activities; on the other, it never fails to spur them to further questioning and to equip them with stimulating information with which to face new obstacles and new difficulties.

The children acquire this knowledge, the historical data necessary to their purposes, from books and pictures, from excursions to museums and libraries, and from the various forms of presentation which the teachers use. But the determining factor as to the exact knowledge which they shall acquire

and the direction which the detailed work shall follow in the selected field, centers in the children's own interests, in their questions, in their problems, or in their individual projects which are related to the group project.

The course provides for each child in the school a limited, yet intensive and oft-repeated experience in his early years in those elemental occupations through which mankind has supplied his fundamental needs in whatever environment he has lived,—not only his needs for food, shelter, and clothing, but those more subtle yet not less necessary ones for self-realization, for satisfying his intellectual curiosity, his aesthetic and spiritual hunger, and aspirations. The method of study used in this course is that of a social or natural science. It is a method of questioning, of experiment with actual materials, of trial and error, of crude classification and simple generalization.

In experimenting to solve their problems the children are led naturally to trace the development of many phases of human activity, from more primitive forms to the complex mechanism existing today, and they are bound to discover for themselves that for those who have the desire and the ability there still exists a wide field for experiment, that there are alluring opportunities to add some new fragment to the sum of human knowledge, or some bit of creative imagery in music, art, or literature to the enduring beauty of the world.

The course which our teachers present in detail in this pamphlet has been given for many years with few radical changes either in principle or in method—although its content has been constantly modified and vivified by individual teachers—and it has become, we believe, better and better adapted through the years to the growing abilities of the children using it. Twice, in past years, the entire faculty has worked intensively for several weeks upon the course, analyzing and criticizing it both for the purpose of improving it from the standpoint of its response to the needs of children in each school year, and to test its continuity and progression in knowledge and experience from year to year. Such critical consideration has certainly modified the original structure of the course as it was used in the Chicago Normal School, where it originated, but it has not changed it fundamentally; and this stability implies, we believe, that Emily

J. Rice and her co-workers in the Normal School, under the direction of Colonel Parker, possessed the modern dynamic attitude toward the study of history, and that they knew children and the history of civilization and the objectives of such a course so well that they were able to select a permanently valuable plan of study and activity to help them in training their children for citizenship—for social service of an effective, self-organizing voluntary character, for joyous participation in useful and wholesome work and play.

Introductory words would not do justice to the work of this course if they did not speak of the spontaneity and joy with which the children respond to it in all the grades. Indeed, its best endorsement lies in the fact that this work seems important to the children themselves. We believe that it must be in precisely such response and activity as this course arouses in children—in such experience in giving and taking, in appreciating and inspiring each other, in learning to lead and to follow, in recognizing the rights of others while receiving full justice for one's own endeavor, in respect for each other's abilities and gifts—that we may hope to find the basis for the righteous living of the future, may hope that a habit of coöperation may be formed which will provide the experience necessary to help humanity to live and work together for the benefit of all. It must be a slow process, for all forms of evolution are slow, and perhaps the child himself may learn patience as he studies the steps in the slow development of humanity through the ages from the savage to the Christ.

There are indications that people in many nations are dissatisfied with the ideals and methods of traditional education. New leaders, men of vision, may arise and vast changes may result. A case in point is the great educational conference held in July in San Francisco at which the representatives of fifty nations met and demanded that the world find a better way than war to settle disputes. A Committee was appointed from that conference to report in 1925. The task of this committee is to present a plan so to change textbooks that war shall not be glorified, that youth shall not be inspired and taught to believe that a soldier's bravery is the only high form of heroism, the most exalted way to express supreme love of country. The sense

of the conference was that children throughout the world should have magnified in song, story, and marble, the courage and the glorious achievements of mankind in times of peace; should learn to admire and appreciate the less conspicuous forms of courage required in everyday life, and discover heroism in men who patiently construct or labor for the welfare of the world. The committee realizes that it will not be easy to change a world tradition as deep-seated in human emotion and activity as the glorification of war. It will take a long time and endless efforts, and many mistakes must be made in the struggle to keep all man's virility while eliminating brute force, to keep clear from sentimentality while seeking to practice the golden rule.

We look to the future with open mind and hopeful attitude, ready to change our course whenever a teacher can convince the faculty that the modification she recommends has sound educational value and will be an improvement upon the work already in use. We believe that we can say with truth that the subject matter of this and every other course in the school is in the hands of the faculty as a whole, that it is not static, that only the principles and general trend of the course are in any way fixed.

The question must inevitably arise in the reader's mind, "Can so flexible a course of study have sequence and continuity in its subject matter?" And we must admit at once that there is no chronological sequence in our grade work and little external evidence of unity in the course. Yet we believe that as the children are allowed to live intensively and joyously through a number of typical race experiences, all presenting universal life problems, they themselves unconsciously will organize and classify their ideas and knowledge, so that by the time these children reach the high school they will have a fairly clear conception of how mankind has developed through the centuries, a feeling of the continuity of his progress, and a definite knowledge of the influence which environment and ideals have had upon the progress of peoples; and some understanding of those forces which have always pushed man forward and enabled him to express his ideas concretely for the well being and beauty of human life.

We cannot avoid the evidence,—the danger signals are too pronounced—that we are living in a period of supreme world crisis. We teachers, more than others, have reason to share in the belief that the hope of the future rests in education. But it must be a different type of education from that prevailing in the past or actuating the present, different from the traditional education which has been divorced from life and which has recognized as its chief incentives extraneous rewards, prizes, and other forms of selfish ambition. Surely any education which justifies hope for the future must have for its keynote *the principle of coöperation*.

Certain distinguished scientists, with Prince Kropotkin as the outstanding leader, claim that mutual aid is of even greater importance than individual struggle as a factor in the evolution of all life, reaching from the lower forms of animals to mankind in the twentieth century. And he sees in the wide application of this principle, even at the present time, the best guaranty of a still loftier evolution of our race.*

It is a far cry from the present attitude in the world to the acceptance of the mutual aid idea or of the system of education which would teach children from birth, not passively nor theoretically, nor on Sundays only, but actively day by day, by precept and example, that fear and hate, greed and revenge are not only wrong in principle, but must ever be deemed stupid because of the futility of their results. Such a system of education must bring its pupils constantly into contact with existing social phenomena wherever there are important happenings, whether in our own or other lands, and it must teach them to observe fearlessly; to form judgments very slowly and upon much data and without undue pressure or influence from their schools or homes or national government. The accepted system should teach boys and girls that to judge sanely upon any important issue demands a body of exact knowledge, and therefore, since it is usually difficult, if not impossible, for a young person to gather the essential knowledge, an eager, open mind is youth's best tool. They should learn that data should neither be accepted nor rejected impulsively, that they owe a debt to the past and a duty to the future which should make them appreciate the vast

*See Summary "Mutual Aid" (Pages 12-223), Kropotkin, Alfred A. Knopf.

stores of accumulated wisdom and truth which history and science provide. Thus to stimulate in youth a desire for a body of thorough knowledge is the duty and privilege of every school—to train students on the one hand to observe and think independently, to judge and act for themselves; and on the other hand to realize that individual judgment should be very humble until weighed and tested in the light of accumulated human experience.

History, illuminated with stirring adventure and with world-shaping altruistic deeds of great men of all times, is better fitted than any other subject in the curriculum to awaken in boys and girls a real sense of their responsibility to society. Yet the study of history today seemingly leaves American boys and girls indifferent to the forces and events which are rapidly destroying the good will and fellowship of the world. In the case of our own school, we believe the fault lies not in any inherent weakness in the content of our history course, nor in the method used in work, nor in the characteristics and possibilities of the children themselves. It is, we believe, due to the fact that both in the home and in the school we have failed to give the children early in their lives sufficient individual and community responsibilities, have failed to make these responsibilities increase naturally with the children's growth, have failed to keep them in constant touch with the most important world tendencies and problems; as a result our carefully shielded children have not a conscious realization of their relationship to the present world upheaval. We believe it is the duty of schools to emphasize, more than ever before, the preparation of youth for those demands which our country must soon make upon this generation, for definite knowledge of world affairs, and for that enlightened leadership upon which the fate of civilization depends. We believe that in the past we have been content to have the children busy and happy in an isolated and protected area detached from the larger area—the world.

Yet American children given opportunity will prove as capable of altruistic acts as children of other lands. We note with deep interest "The Young People's Movement" in Central Europe. This movement was self-initiated and is self-directed. It is an earnest quest of young students for a concrete goal

which will benefit all. Young as they are, for many of these students are not yet eighteen years old, they have the courage to suffer and sacrifice physical comforts for an ideal. The movement has representatives in ever-increasing numbers from at least six of the war stricken countries of Europe. While it has a religious and ethical basis, while it is aimed against the gross materialism of the age, while it has the earmarks of youth with all its egotism, self-righteousness, and intolerance, yet it is not fanatical. Those of its members who are not students are all doing practical work in some profession, industry, or field of art. They are filled with youth's buoyant hope, faith, and courage, and all their keen emotions are directed and controlled by a great, inspiring purpose. Adolescent America might well be brought into contact with such soul-awakening social action, might well be given a chance to ally itself with some great cause, instead of being allowed to drift helplessly in a life which smothers social conscience, which fills youth's leisure with many forms of selfish, frivolous amusement, and which drugs the senses and dulls intelligence with jazz music and over-stimulating cinemas.

We look upon our well-nourished, happy children and find no cause for discouragement, but we do find grave danger for future citizenship in the present formal system of education. Our own school, with many others scattered over the country, can claim with some degree of fairness that the principle of coöperation, rather than that of selfish competition, has been stressed for many years, not only in this history course but in all study and forms of daily living, and the results have been encouraging.

The Social Group Project has been the accepted form of organization for study in carrying out this principle of coöperation throughout the grades, and it has proved to be particularly well adapted for the work outlined in this history course. It ingrains deep in the child's experience those habits of thought and action, those satisfactions and joys which come naturally from working intelligently with one's fellows to accomplish a purpose which seems important to all the workers. Within the scope of the social group project there is abundant opportunity for original investigation—for individual or small group enter-

prises. The pupils often elect to work alone or with two or three others upon some problem related to the whole. As one of our teachers has said, "There are by-paths of delight leading in all directions from the main road which the class is following," and often these individual investigations develop new interests and lead to goals far removed from the original situation or question.

We believe that self-actuated work causes the greatest intellectual gain to children, and therefore we seek to encourage individual projects, to foster special interests, and to allow time for such activity on the regular school program; yet it seems to many of us a dangerous, even anti-social practice, to use individual work exclusively instead of planning for a large measure of coöperative work. As was said before, we believe that the teacher should select the subject matter of the history course and that the children should be educated to hold fast to certain traceable threads which run through the entire fabric of the development of humanity, especially to those which have advanced civilization in many eras under many varying conditions and recurring human phenomena.

We believe sincerely that for purposes of development children must be treated as individuals and not as a group, and that, in matters requiring formal drill, individual instruction and study are more effective and more economical than group instruction and drill. But we contend that if the special function of a course in history is to teach children to live and coöperate successfully with their fellows, the school must be organized to establish in them those coöperative habits which produce people of social conscience and social power.

Because many schools now are stressing individual work in all forms of school activity, history included, we thus outline in some detail our reasons for emphasizing the social group project. We would not make the child responsible for the selection of subject matter nor allow him free choice of activity all day long, because we believe he is not fitted either in experience or in knowledge for the task, and because we think his intellectual hunger, like his physical appetite, is unsafe as the exclusive guide for his daily nourishment and for a balanced ration; however, we would give him much freedom and oppor-

tunity for choice and assimilation within the scope of the carefully selected materials which the teacher spreads before him and which should contain the various elements necessary for his best development.

The school is utilizing the results of the scientific testings of intelligence and many standard tests for the measurement of subject matter skills. It would like to participate in the gaining and using of such knowledge for whatever light it may throw in any direction; but our teachers will be slow to grant that children should be judged and classified as "superior" or "inferior" upon the basis of any mechanical measurement which can be devised, which leaves untouched and uninspired the emotional and spiritual springs of child nature and unrecognized those special gifts which so often offset or compensate for apparent defects or deficiencies in children. We welcome measurements and scientific data, but we doubt that mankind can successfully or rightfully be classified on the basis of intelligence alone, because the nascent possibilities of human beings may become suddenly active under the stimulus of an inspiring motive, and we all know the influence of improved health conditions upon intellectual activity.

However, we are not contending that we have an ideal course of study or that we are necessarily right in our belief that the social group project trains children directly for good citizenship; but only that we have sound reasons for our faith in the response which our children have given throughout the years to this principle of cooperation.

We realize that as yet we have only glimpsed the possibilities of children set free to act under the urge of their own interests, and we have not even yet grasped fully the idea that the teacher's function is to create a rich environment, suitably equipped for the children's work and play and stimulating to their interests. This atmosphere must of course be permeated with the influence of real men and women who consider it a privilege to work with and for children,—strong personalities, artists, lovers of beauty and life, experts in some field of human endeavor. Such leaders *educate* and train in the true meaning of the word; they judge work according to its power to awaken real and abiding interests, to spur children to earnest effort, to

equip them with habits of industry, to implant in them love of good workmanship, and above all to cultivate in them a tolerant, open-minded love of truth.

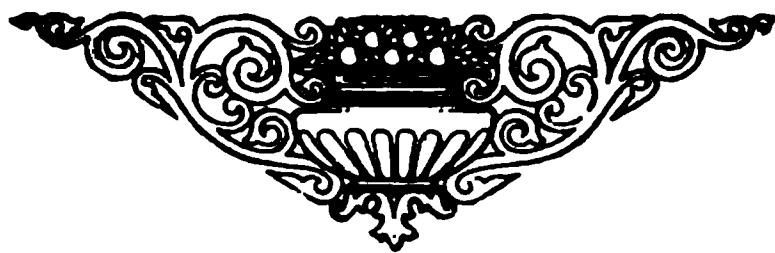
Such a teacher was Jennie Hall, who so greatly enriched this history course, as she did everything which her rare pedagogic vision penetrated. Fortunately, we have in permanent form the published contribution of her fine historic sense and wide knowledge, crystallized in simple picturesque form in her books: *Weavers and Other Workers*, which our school uses in the second grade; *The Story of Chicago* and *Viking Tales*, in the third; *Men of Old Greece*, *Four Old Greeks*, and *Buried Cities*, in the fourth; and *Our Ancestors in Europe*, in the grammar grades, especially in the fifth and seventh. The school owes her much, and we would have, if we could, as the outstanding intellectual practice of the school, her spirit of courageous doubt, her sharp questioning habit, her tireless, joyful searching for the best conditions for child education.

We believe that the articles of the teachers make clear this sincere belief of the school that not only must the children have conditions for free and spontaneous, all-round growth, but that the teachers, too, must have the same kind of freedom for creative coöperation and the same responsibility for good results. It is, of course, necessary that the faculty agree upon certain fundamental principles, policies, and ideals in order that the school as a community may move steadily toward its accepted goal, which we sum up in the words "ideal citizenship." To accomplish this end, the teachers must be free to judge and choose the means to their ends, subject only to the discriminating criticism and judgment of a democratically organized faculty.

As yet, the work in the elementary grades is more characterized than that in the high school grades by such freedom of choice, by natural incentives to work and freedom, and therefore is more alive and growing. This is not because of internal pressure, but because the overwhelming proportion of children in this particular school go to college, and the high school course of study therefore has been quite markedly modified by college entrance requirements, so that the subject matter of our high school course in history conforms very closely to current practice in other college preparatory high schools. However, aside from

the college requirements, since the pupils doubtless have a background of experience and are ready to appreciate a chronologically arranged unit of history study, our high school history course, though not unusual, seems worthy of taking its place in this book. The value of the work which the children do in history has been again and again demonstrated in the keen interest and questioning attitude of the pupils and the thorough mastery of the work presented. Still we hope that in the near future the high school teachers may take their place in the experimental field and make a contribution to education in the secondary school by creating a history course as closely in keeping with the avowed purpose of the school as is that of the elementary school.

Finally, we would have all the work and every method of the school thoroughly tested by the degree in which it enables every child daily *to take from life* his fullest measure of useful happy experience, and *to give to life* fearlessly and unselfishly his fullest measure of effective, soul-satisfying service.



FIRST GRADE

SOCIAL ACTIVITIES

The work of this grade is based upon the child's interests and experiences in his home and his environment. His food, his clothing, his house are the unquestioned elements of his environment. By reproducing these human essentials in his play and school activities he becomes conscious of them, yet they are so complex that he cannot realize them in their relations or processes.

As the great source of food supply the farm presents the simplest form of present day life. But here too modern methods have so modified farm labor that the steps of production are difficult for a child to follow, even though carried on in a small social unit. On the farm the child sees the labor of man replaced by machinery run by steam or electric power. In his home he sees only the results of industry, not its beginnings and processes. On the other hand, the simple life of primitive people can be readily understood by little children; they can see the entire family sharing the work of supplying its needs; they can see the whole process of production from the gathering of materials to the use of the finished product. Therefore, the study of certain types of primitive people gives background and unity to their own varied experiences, activities and forms of expression. The Tree-man, the Cave-man, the Eskimo and the Indian are used to throw into conscious contrast and more vivid realization present day conditions.

Each year, for instance, the children gather and husk the corn from the school garden, and then the entire grade spends one day at a farm. The teacher and the farmer here direct observation and focus attention, so that all the children get the same background.

PART I—FOOD AND THE FARM

A list of the various kinds of food the children most enjoy is recorded on the blackboard, and gives rise to many questions



GATHERING CORN ON EXCURSION TO THE FARM



HUSKING CORN FROM THE "POOR CASES"

concerning their sources. The children have these questions in mind when they visit the farm. Here they look into the great

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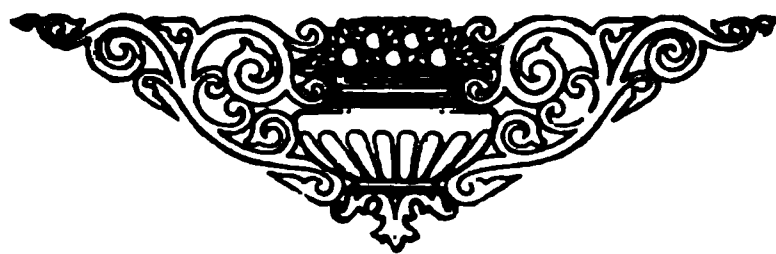
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GATHERING CORN ON EXCURSION TO THE FARM



LOOKING INTO THE GREAT CORN CROCK

cerning their sources. The children have these questions in mind when they visit the farm. Here they look into the great

bins of wheat, oats, and rye. They climb to the field at the top of the hill, fill their arms with corn, and run down to feed the cows and the ever-hungry pigs and chickens.

They are interested in the great, towerlike silos, and can hardly realize that these contain the winter food for the horses and cows. The farmer milks one of the cows, and the children have a drink of warm milk. A look into the milk house shows them where the milk is cooled and the bottles are cleaned. The suggestion is made that possibly some of this milk goes to their own homes. Here are the gentle sheep covered with soft wool that is made into clothing. The tiny calves are always ready to put out their moist noses and pink tongues when little hands are timidly outstretched to pat their heads. The great bull is not so cordial, and is treated with the respect due his size and strength. The pigs and their large families of pink-nosed and curly-tailed babies are the center of much admiration and interest.

Last, but not least, comes the climb to the top of the hay loft, and then the thrilling adventure of sliding down, down, over bumps of baled hay, and then on and on over crackling, slippery hay to the floor.

In the school room the day at the farm is thought over, and all the most vivid experiences and observations are written on the blackboard. Since the children have no writing ability at this time of the year, the teacher records their statements. These are made into charts which the children read later in the term. They are interested in records which other first grade children have made after visiting the same farm, and find incentive to organize their observations into similar word pictures. The reading is thus meaningful and gives the children great pleasure, for through it they are able to re-live the experiences of this day on the farm. But they have enough power in drawing and painting to express themselves freely, and it is in this way that they reproduce their direct impressions of the farm trip. They not only draw and paint, but they attempt to make a scene that is more realistic by modeling in clay, on the sand table, animals to stock a farm yard. Finally, the material is organized into a morning exercise, each child telling the thing he most enjoyed.

As an outgrowth of the visit to the farm, the children cook cereals and make cottage cheese and butter. They dry fruit and make jelly as their means of preparation for winter,—an idea that grew from the food stored for the animals in the silos, and from the bins of grain, the cribs of corn, and the loft full of hay.

In dramatic play they are given the Mother Goose rhymes of *Hey Diddle Diddle*, *Little Boy Blue*, and *Tom, Tom, the Piper's Son*; the fables of *The Dog in the Manger*, *Lark and the Young Ones*, *The Town Mouse and the Country Mouse* and the story of *The Buckwheat*, by Anderson. Christina Rossetti's *Swallows* and her version of *The Town Mouse and the Country Mouse* are used. At Thanksgiving time they learn the following passage from the Psalms:

"The pastures are clothed with flocks; the valleys also are covered over with corn; they shout for joy, they also sing."

The class learns the songs of *The Gentle Cow*, *Up in an Apple Tree*, *The Corn Soldiers*, *The Harvester*, *The Hay Stack*, and *Come, Ye Thankful People*.

Through this poetry and music the entire experience is lifted to a higher plane.

PART II—SHELTER

THE TREE DWELLERS

As the activities centered about the production and preparation of food in Part I, so the second step of the work centers about the idea of shelter,—the child's house.

The child already knows something of the materials and construction of his house for he has seen the building of city houses. He has watched with wonder while beams were lifted into place by giant cranes and fastened together with red-hot bolts.

After finding out the different kinds of materials used in the construction of the children's own homes and in homes seen in pictures or observed while on trips, a blackboard sketch is made of a tropical forest, a stream, and wild animals.

This problem is presented: How and where would you make a home in this place without tools? The children usually

suggest a tree, since the situation is rather evident. Then more difficult questions arise as to how the shelter may be made, and what materials may be used, and what and how food may be obtained.

The problems of construction are made more realistic to the children by a day spent in the woods, where they make a playhouse of brush, twigs and vines. The children begin to build this house as an eagle builds her nest, by gathering sticks and twigs and throwing them into a pile. But they soon see that a better protection can be made by weaving together small branches and tying them into place with stout weeds and vines. When the little hut is finished, they make a carpet of red and yellow leaves.

Some of the children make bows and arrows of twigs and vines, with which to hunt imaginary lions and tigers; others bring in, as their imagination suggests, wild fruits and nuts, or small game, such as rabbits or squirrels, caught with their hands. They search the woods to select trees with spreading branches, so formed that a shelter might be made among them. They choose one that could be quickly climbed when the dweller sought refuge from wild animals.

The vivid impression of the day in the woods and the emotion aroused by it excite creative imagination, and direct it toward further activity and learning. In order to provide a house for more permanent use, the children gather the brush which has been left from trimming trees in the school yard, and waste shrubbery from the park. Of this material they construct a little hut in the playground.

Other educative experiences come in dramatic play, painting, and modeling, each of which is part of the child's means of expressing the ideas he gains as the subject develops.

This outdoor imaginative play has created an interest in people who once lived in trees before men knew how to build houses. Stories of the Tree-dwellers are told. Sand models of such an environment are made. The class visit the conservatory in the park to see the palms and tropical trees. They look at the long, heavy, swinging vines resembling those that helped the tree boy to swing from branch to branch to escape a wild boar. The imagery built up through these experiences enables the

fishing with a pole of wood, a line made of leather, and a hook of ivory. The class see a sledge made of small pieces of drift wood, and another constructed entirely of bone, and wonder at the Eskimo's skill and patience in getting what he needs. They look at the dog team and driver, and imagine what fun an Eskimo boy must have guiding his dogs with only a whip. The Eskimo in his kayak looks as if he were about to throw his long harpoon at a fish, or perhaps at a whale.

The cases of ivory spoons, bird darts, and harpoon and spear heads, suggest the source of the material from which these implements and weapons are made. Even needles and combs are of ivory. The long ivory tusk of the narwhal suggests a visit to see the skeleton of a whale. The children find that it takes twenty-eight children, all standing in a row, to make a line the length of the whale. Some animals that resemble our buffalo are apparently digging moss from under the snow; these are musk oxen, which the Eskimo gladly hunts since he finds a use for every part.

At another time we visit the Lincoln Park Zoo to see the live polar bears, the wolves and Eskimo dogs.

After taking these trips the children become interested in books telling of the Eskimo. They look at pictures with more interest. They read the school leaflets. The material of these leaflets adds to their knowledge of the lives and customs of the Eskimos. Their reading of this material is intelligent and purposeful because their visual preparation for it causes their imagery to be pleasing and accurate. In these leaflets much of the information that the children have acquired culminates in story. An example follows:

THE ESKIMO AND HIS KAYAK

The Eskimo in his kayak skims over the water like a sea bird.
He rides over the waves.
He dashes through them.
He tips his kayak upside down and rides under the waves.
He is not afraid.
His kayak is covered with skin.
His suit is of skin.
No water can get in.
He can play in the sea as easily as you play on land.
He can throw his spear at a fish.

He frequently helps his neighbor, and the shelter whose construction he began as an individual project becomes a community activity. In imagination he sees his cave of sparkling rock. As he digs with his hands, or with a stick or stone, he realizes what an advantage it is to have a tool. One day a boy found a pick and the whole class immediately demanded his help. The group had quickly gone through a race experience, and through it gained a slight realization of one step in social progress.



DIGGING CAVES

The class visit the Zoo in Lincoln Park to see those animals which inhabited the plains and swamps of the Cave-man, such as the huge elephant and the ugly hippopotamus. Under the stimulus of interest gained through such avenues as excursions, pictures and experiments, the children paint and model different phases of the life of the Cave-man and his surroundings. This experience helps to clarify and fix the imagery and to satisfy the child's desire for concrete expression. The whole picture of the life of these people is put into art form with the help of the teacher of eurythmics. Under her guidance the children give

rhythmic form to some imaginative experience. They have the pleasure of interpreting, and at the same time acquire the earliest form of rhythmic dance.

From all these experiences the child gets the impression that at one time people lived in a manner differing greatly from that of the present, and in that proportion the present-day becomes meaningful. This work affords many opportunities for both group and individual activities. When the children's interests have been broadened through pictures, excursions and construction, their desire for more information leads to reading. No one text book is used, but reading is largely supplied by school leaflets and supplementary books. The ideas worked out by the group are recorded, and these form the basis for word recognition and reading. At first only a word or two is presented, and the remainder of the thought is expressed orally. Later a very simple sentence is written. Questions similar to these are asked: In order to see animals a long distance, what sort of eyes must a tree boy have? What kind of ears must he have to hear an animal coming softly through the forest? What sort of legs and arms must he have to prevent an animal from overtaking him? A reading lesson similar to this is constructed:

The tree boy has keen eyes.

He has sharp ears.

He has strong arms.

He has strong legs.

Then what the tree boy can do, follows:

The tree boy can run fast.

He can jump from rock to rock.

He can climb quickly.

He can swing from branch to branch.

No animal can catch him.

The reading lessons are a record of ideas and feelings expressed by the children, or suggested by the teacher, about the experiences through which they have been living by means of dramatic play, observation, story, and picture.

PART III—THE ESKIMO

In Part II the idea of shelter was thrown into high light by the comparison of modern homes with those of the Tree-man

and Cave-man. During the winter and spring the children study the Eskimos and Indians, peoples whose lives are controlled by dominant geographical conditions, and the unity and inter-relations of human necessities rather than any one element is emphasized. The natives of Greenland are selected for this study because information concerning them is easily available.

The same method of gaining first hand experience precedes the study of Eskimos and Indians. For example, children are taken to the playground, usually after the first heavy snow storm, and asked to construct a house which would protect them.

The storms of ice and sleet, the fierce cutting winds, the frozen pond, the blocks of ice piled high on the lake shore, the ice floes in the open water, all suggest the Arctic region. Mental imagery of the surroundings of the Eskimo is built up through what the children see around them that corresponds to something similar in the Eskimo's life. That is added to by pictures, stories, and lantern slides.

A vivid impression of the remoteness of Greenland is gained through taking a voyage in play across the ocean. The children construct a train of chairs and tables, and amid the blowing of whistles, the ringing of bells, the chug of the engine, and the calling of stations, the class arrives at New York. Here a ship of similar construction is procured and filled with food, and the long voyage begins. During the voyage a boy who has been across the Atlantic makes numerous tests of the temperature of the water to prevent collisions with unseen icebergs. As the boat nears land the children mention what they see in imagination: Eskimos, polar bears, seals, walrus, and anything they are able to build in through knowledge gained from pictures and stories.

After interest has been aroused in this way, a trip is taken to the Field Museum to learn more of the appearance and customs of these people from the life-sized models exhibited there. The children find that Eskimos wear suits of great beauty and value, made of the skins of bear, reindeer, wolf, seal, and birds. The daily occupations of the people are learned by studying the various illustrative groups. A woman is dressing a skin, a man is boring a hole in ivory or bone, and a tiny boy is patiently

fishing with a pole of wood, a line made of leather, and a hook of ivory. The class see a sledge made of small pieces of drift wood, and another constructed entirely of bone, and wonder at the Eskimo's skill and patience in getting what he needs. They look at the dog team and driver, and imagine what fun an Eskimo boy must have guiding his dogs with only a whip. The Eskimo in his kayak looks as if he were about to throw his long harpoon at a fish, or perhaps at a whale.

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His kayak is covered with skin.
His suit is of skin.
No water can get in.
He can play in the sea as easily as you play on land.
He can throw his spear at a fish.

He can throw his harpoon at a whale.
Do you remember Boas?
He says:
"Boas has no fear,
As he throws his spear.
His kayak he can guide,
No seal from him can hide.
Over the waves he rides,
Under the waves he glides,
Through the foam he splashes,
After the seal he dashes."

The children make large paintings of polar bears, seals and Eskimo dogs, using calcimine paints. They learn the *Seal Lullaby*, by Kipling, and sing, *If I Were a Little Eskimo*.



THE ESKIMO IGLOO ON THE PLAYGROUND

It is great fun for children to make a more complete and better igloo in the snow after their first experimentation and they return to it with added zest. Some children have Eskimo costumes which they wear indoors and out. These are made of brown, gray or white canton flannel or cambric, and are trimmed with fur or canton flannel.

All experiences, information, and observations are brought together and shared with others in a morning exercise.



READY FOR MORNING EXERCISE ON ESKIMO LIFE

PART IV INDIAN

When the warm days of spring bring a desire for more freedom and out-of-door life, the study of the Indian helps to satisfy these longings.

Again the problem is presented of making a home that differs in type from any previously studied, and some child always suggests a tent. Then the question arises as to what conditions are essential for a good camping ground. The class now travels, by means of stereopticon pictures, over mountains, valleys, plains, rivers, and lakes, in search of a country which supplies all the requirements for the sustenance of life.

Through stories the children see Chicago as it once was, an Indian village with wigwams of skin; wild deer running through narrow wooded paths; hunters wandering through nearby forests; Indian children playing about; squaws carrying bundles of wood; and Indians in their canoes paddling up and down the lake.

Many questions arise concerning Indian life, and a visit to the Field Museum is necessary to answer some of them.

Here we find models of Indians of the central prairies, of the dry lands of the Southwest, and of the wooded lands of the Northwest, all showing the effect of environment upon food, shelter and clothing.

The children study the groups showing home life and activities of the central plains, and some of the ceremonial dances and games. Because their attention has previously been called to meanings in Indian decoration, they study the designs on clothing and tepees, and try to interpret them. They see how flint arrow heads are made. They look at the miniature homes of the Pueblos in the rocks and cliffs. They learn how the beautiful Pueblo rugs are woven, and are interested in the looms. The children try to interpret the designs taken from the great things in nature which most impressed these Indians, such as mountains, clouds, and lightning. The home of a group of cliff dwellers shows women painting pottery, grinding corn, and baking bread. The Indians of the wooded Northwest are seen in a shelter constructed of bark and slabs of wood. The women are dressed in skirts of grass, or strips of bark, or cords of wool. Here one woman is softening bark for weaving. Another is cooking soup by dropping hot stones in wooden bowls filled with water. By studying these various groups an impression is gained of the value of the division of labor.

After observing patterns on baskets, pottery, clothing and the tepees of the different tribes, the children see that there is a desire, not only to construct a necessary article, but to beautify it with symbols of story or emotion, and they are led to notice how the dominant physical environment modifies that symbol. They study the animals which the Indians hunt and which appear often in Indian stories. The children visit Lincoln Park to see the grizzly bear, the coyote, the deer, the buffalo, and other animals of North America.

It has occasionally been possible to have Indians from the reservations come to school in native costume to sing and tell stories and dance.

The children model an Indian village showing the people and their activities and some of the wild animals of use to the red man. To make Indian life more realistic a wigwam is put up in the school room, and animals and trees are painted almost

life-size to make a natural setting. From a background made of these sensory and imaginative experiences comes the motive for reading. A desire to know more about Indians causes the child to master the printed words in the school leaflets. There are also some simple Indian legends and parts of "Hiawatha" that he enjoys reading. Other reading lessons are derived from blackboard records of ideas which the children gain from observation made during field trips and reading.



FIRST GRADE AT INDIAN. ENDED AT WARSTALE FIELDS STORE

They write descriptions of their drawings. Every child plays that he is an Indian, and assumes an Indian name. They sometimes enter so fully into the spirit of the work that they substitute these names for their own. Each child becomes an Indian chief and wears a gay suit beaded and fringed. Frequently a mother adds a beaded symbol showing that her child has been a brave Indian. To this suit is added a head dress, wonderful in most primitive coloring of red and yellow feathers. Beads are sometimes made and dyed as a substitute for buffalo

teeth or bears' or eagles' claws, and are worn around the neck with a pride equal to that of a real Indian brave.

A fitting culmination to the year's work, and a keen stimulus to the best observation and experience of children, lies in certain larger social demands which usually come near the end of the school year. For example, the physical training department may ask the first grade to wear their Indian costumes and give an Indian dance or play an Indian game on Field Day. The party which each lower grade gives to its big brothers and sisters and other members of the senior class may take the form of an Indian party. Sometimes a camp fire is made around which



IN COSTUME FOR INDIAN DANCE ON FIELD DAY

the children sit and tell Indian stories and sing Indian songs. When the work is finished, the children give a morning exercise to the other classes, telling what they know and showing beautiful rugs and Indian curios which the parents have loaned.

Into all these activities of the year the children enter with such joyful and intelligent co-operation, they show so convincingly their ability to utilize knowledge and power gained and to adapt their skill to new demands in such original and vital

ways, that it seems to prove the fitness of such material and problems for children of this age and stage of development.

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How the World is Fed.....	F. G. Carpenter	Am. Bk. Co.
North America (Geographical Reader)	F. G. Carpenter	Am. Bk. Co.
Foods and Their Uses.....	F. O. Carpenter	Scribner
How We are Fed.....	Chamberlain	Macmillan
Stories of Industry.....	Chase and Clow	Educational
Domestic Animals and Plants.....	Davenport	Ginn

Department of Agriculture Year Book 1905		
The World's Commercial	Freeman &	
Products	Chandler	Ginn
The Great World's Farm.....	Gaye	Macmillan
Iconographic Encyclopedia Vol. 6, P. 177		Appleton
Industries of Today.....	Soue	Ginn
Domesticated Animals	N. S. Shaler	Scribner
First Principles of Agriculture.....	E. P. Voorhees	Silver
Agriculture in the Tropics.....	J. C. Willis	Putnam

SPECIAL KINDS OF FOOD:

A. *Grains:*

Process of Flour	Percy Amos	Longmans
Wheat Industry	Bengston and	
	Griffith	Macmillan
Story of a Grain of Wheat.....	W. E. Edgar	Appleton
Wheat Fields and Markets of		
the World	R. E. Smith	Modern Milling Co.

B. *Fishing and Fisheries*

Wild Norway	Chapman	Sangman
The Early Sea people	Dopp	Rand
Captains Courageous	Kipling	Century
Alongshore	Sidney Reynolds	Macon
Home from Sea.....	Wasson	Houghton
North Sea Fishers and Fighters	Walter Wood	Dutton

C. *Tropical Foods:*

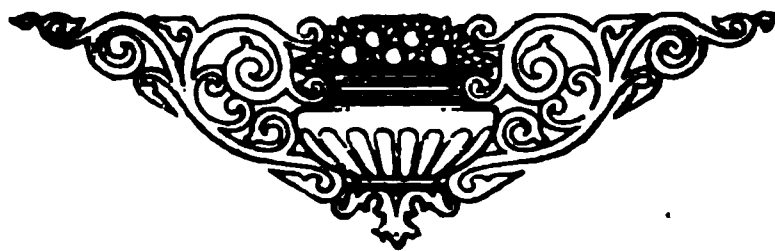
From National Geographic Magazine as follows:

The Kingdom of Flowers	November, 1911
The Wonderful Canals of China	October, 1912
Where our Bananas Come From	July, 1912
Adam's Second Eden	February, 1912
The Oases of Northern Africa	January, 1914
How the World is Fed	January, 1916
Cuba The Sugar Mill of the World	July, 1920
Tahiti The Playground of the World	October, 1920
Eden of the Flowery Republic	November, 1920
Modern Persia and Its Capital	April, 1921

SHELTER:

Homes and Habitations of Man	Duc	Osgood
The House	Bevier	Am. Sch. of
		House Ec.
How we are Sheltered	Chamberlain	Macmillan
How the World is Housed	Carpenter	Am. Bk. Co.
Houses of the World's Babies	Scantlebury	Flanagan

Decorations of the House.....	Wharton and Cadman	Scribner
The House Beautiful.....	Cook	Scribner
Home Life in Colonial Days.....	Eacle	Macmillan
Children of the Cliff.....	Wiley and Edick	Appleton
Lodrix, the Little Lake-dweller....	Wiley and Edick	Appleton
Cliff-dwellers and Pueblos.....	American Antiquarian Society	
Logging	Harper's mag., Vol. 20:437	
Life in a Logging Camp.....	Scribner, Vol. 13:695	
Story of a Pine Board.....	St. Nicholas, Vol. 25:20	



SECOND GRADE

INDUSTRIAL ACTIVITIES—THRESHING, MILLING, AND WEAVING

In the second grade the story of man's progress advances from hunter life to shepherd life and to early tillers of the soil. The work is largely a natural outcome of the children's experiences: the school garden, which they planted as first-graders, must be harvested and used; the bundles of grain, lugged back from happy vacations in the country, must surely be threshed and milled, since garden crops, straw, and crushed grain are products vital to the success of a cherished second-grade activity.

Besides, it is great fun to thresh grain and mill it, because children are such past-masters at invention. Night and day their heads are humming with make-shifts and methods of procedure - and what is much to the point, the steps they take in these make-shifts often surprisingly resemble the steps taken by the grown-ups of long ago. Therefore, in the carrying on of our second grade undertakings, it is easy to see that the failure - or, perchance, the success - of one tool or method of procedure leads onward to new and bolder inventions, until, without realizing it at all, the children are engaged in a simple study of early agricultural peoples. Moreover, a third vivid experience, the study of Indian life in the first grade, leads easily to a desire to weave, and this weaving experience, like threshing and milling, also kindles interest in new types of people, new customs, new occupations.

One other important activity of the grade must be mentioned. It is the caring for a small flock of chickens throughout the school year. This occupation appeals to children's love of pets, and at the same time teaches the responsibility that ownership entails. The school sees to the housing of the flock, but the children must provide proper food, and pay for it with the money obtained from the sale of eggs. This need for poultry grain furnishes a real motive for harvesting the corn and sun-flowers planted in the school garden, and for threshing the

bundles of grain brought back from the children's summer vacation.

To permit children to handle such materials as scratch grains and egg mash for a whole year without knowing their ingredients, or without understanding how they are manufactured, would be a stupid procedure. After their experiences in threshing and milling, the children are able not only to identify different grains, but to recognize such grain products as bran, corn meal, wheat middlings, steel-cut oats, etc., the products found in most commercially prepared poultry foods.

The different experiences gained through these activities are grouped under the following heads:

1. GARDEN WORK:

Gathering and feeding of sunflower seeds; gathering corn, husking, shelling, measuring and storing for winter; cutting corn stalks with sickle, tying into bundles, and making into a corn shock; using corn stalks, later, to line big holes dug in the garden, where beets and cabbage are buried for chickens' supply of winter green food.



SCENE FROM A LITTLE HARVEST PLAY

The boy at the right is playing on a fiddle made out of a corn stalk.

2. THRESHING WHEAT AND OATS:

Since this work is done before the chickens come from the country, the big cement runway floor (about 12 ft. by 30) is used for an outdoor threshing floor. The methods tried are as follows: Threshing by rubbing grain between hands; by pounding with sticks and flails, by tramping with feet, the children pretending they are such animals as ponies, oxen,



LYING A GOOD ARMY OF CORN STALKS IN THE SCHOOL GARDEN

or canals, and, lastly, by dragging a heavy log over the grain, the children again pretending they are animals dragging behind them man's primitive invention.

3. **WINNOWING GRAIN.**

This is done by scooping chaff and grain onto trays, or box covers, lifting them high over head, and pouring the contents down on newspapers, spread on the cement floor.

4. **MILLING.**

By rubbing ears of corn on coarse graters; by pounding in wooden and in iron mortars; by grinding in coffee mills and sifting through small hand-made sieves, such as wire, cheesecloth, and bolting cloth.

5. **EXCURSION.**

To supplement the school's garden crop, an excursion is made to a farm, where corn is bought, brought back in gunny sacks, and stored for winter use.



READY TO REAP WHEAT

The information necessary to the carrying out of these experiments is gathered from a variety of sources; from reading lessons on primitive and old fashioned methods of harvesting, threshing, and milling; from hearing stories about primitive agricultural peoples; from looking at geographic pictures; from seeing school movie films which show progressive steps in



TRAMPING OUT GRAIN ON THE THRESHING FLOOR
The two children bending over are camels

agricultural processes; from excursions to the Field Museum to see models of primitive tools, such as plows, hand mills, etc.



HUNTING FOR A SUITABLE LOG

The children removed the bark and drove a spike in each end—then with a suitable harness which they also made it did excellent service as a primitive threshing machine as it was dragged back and forth over the threshing floor.

While the children are carrying on this work, they are having with the special teachers a variety of creative experiences; they are learning beautiful harvest songs and simple folk dances; they are painting and illustrating people at work in the harvest fields; they hear stories of Ceres and Ruth; and finally they take part in our Thanksgiving pageant



WINNOWER WHEAT ON THE CEMENT RUNWAY FLOOR
The plates are made of paper.

Weaving, our third industrial activity, is such an absorbing experience that children love it solely for the sake of the activity, but when weaving is associated with Indian baskets, with Navajo blankets, with bold symbolic designs—painted by the children in broad sweeps of colors—with such associations formed when first graders, weaving in second grade becomes a subject of fascinating importance. It becomes at once the center from which radiate many informational and creative experiences. Just how these facts and imaginative experiences develop in logical sequence may be gathered from the diagram of a weaving problem.

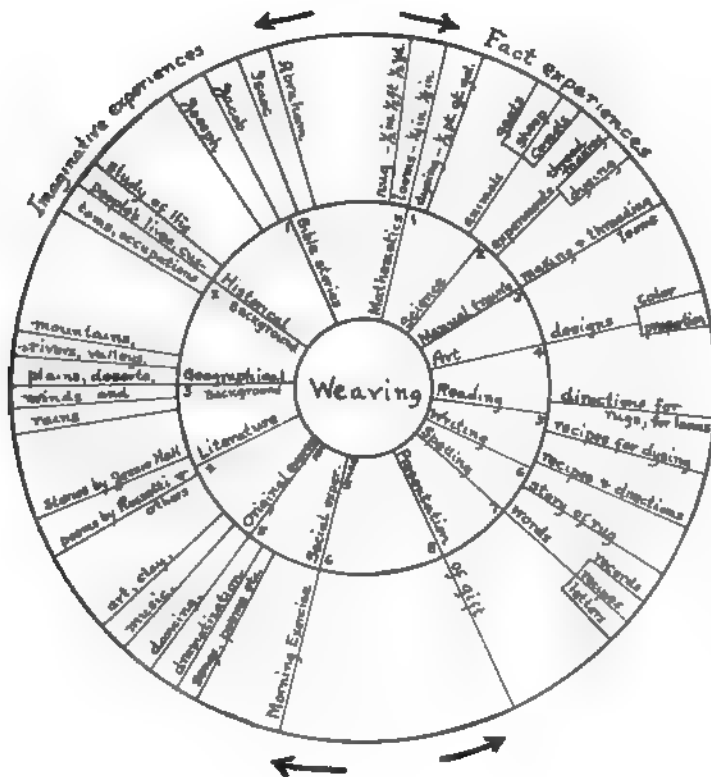


DIAGRAM OF WEAVING PROBLEM

The center of the diagram represents the child's desire or aim, enriched by his joyous background and entered into with enthusiasm. To the right, beginning at No. 1, with mathematics, and reading downward to the presentation of the gift, are indicated the steps taken to acquire knowledge and skill preliminary to the completion of his gift. Fact and technique are easily mastered, because the need for drill originates in the aim and bears directly upon its completion.

Though the child is satisfied, and justly so, with the realization of his purpose, the making and presentation of his gift, the teacher's aim must include far more than this, the enrichment of the child's imaginative nature. To this end, each radiating line on the left, beginning at the top, indicates a step toward the proper orientation of the subject-matter. These imaginative experiences also culminate in a big social experience, the event being either a party or a morning exercise given for the school.

Thus, from the original conception of the purpose to the final giving of a morning exercise, the children's thoughts have been centered upon a succession of interests growing out of a simple but purposeful activity.

Usually, the weaving problem is an individual one, but the picture shows the result of a group effort. It is a couch cover, four feet by six, made for Miss Cooke's office, to take the place of one woven ten years ago, when last year's seniors were in the second grade. After being in service nine years, the first rug was lost, and it seemed fitting to ask the aid of the seniors in replacing the lost one. Because the seniors gave their aid, the designs in the new rug are somewhat more pretentious than are ordinarily attempted by a second grade. The children tell the story of the rug in their letters to Miss Cooke. Wherever these letters refer to "a big sister or a big brother," the reference indicates help given by a member of the senior class. The letters also illustrate the accompanying diagram, since each one relates a step in fact, or in imaginative experience, and shows power in the use of tools of learning. These letters to Miss Cooke are as follows:

Dear Miss Cooke:

We thought the rug should be 4 feet wide and 6 feet long, so it would cover your body.

Alexander

Dear Miss Cooke:

The looms were 3 feet long and 1 foot wide. There were eight of them. The warp threads are $\frac{1}{4}$ inch apart. We made the rug this large because we wanted it to fit your couch and it would be warmer to put over you.

Aubrey

Dear Miss Cooke:

We went to your office. We looked for colors. The colors that we saw were blue and yellow, brown, tan and orange. We put black in because it looked better.

William

Dear Miss Cooke:

We made brown by using walnut hulls. First we broke up the hulls and tied them in a little bag. Then we put them in water to boil one-half hour. Then we added our wool thread. It boiled 15 minutes. All the time we dipped it up and down. We washed it till the color did not run.

Marjorie

Dear Miss Cooke:

This is the way we dyed the orange color. First we put the onion skins in the kettle and covered them over with water. They soaked in the kettle over night. Then we boiled the yarn in alum water for 10 minutes. We had one teaspoonful of alum. After that we put the yarn in the onion water and left it for one hour.

Josephine

Dear Miss Cooke:

We dyed green and black the same way. First we put some diamond dye in some cheese cloth and mixed it with a little cold water. We used 2 quarts of water and one tablespoonful of vinegar with the dye. We boiled the yarn about 10 minutes. Then we washed it and dried it.

Robert

Dear Miss Cooke:

When we made our blue dye we weighed 2 ounces of indigo and one ounce of zinc dust. Then we weighed one ounce of lime. And then we took 2 gallons of water. We put the dye in a big jar and let it stand over night. We stirred it and took off the scum. The dye was all ready. Then we dipped the yarn up and down. At first it looked like it was green, but after a while it turned blue.

Horace

Dear Miss Cooke:

I saw Mrs. Johanna Taege spinning wool in Appleton, Wisconsin, and she gave us some of her wool and we took it to the school, and we dyed it with onion skins.

Philip

Dear Miss Cooke:

In our rug we wanted some sheep and camels. We made pictures of them on the blackboard, and Lisette, our big sister, chose my sheep and camels. Margaret, another big sister, helped us to weave too.

Georgette

Dear Miss Cooke,

I made this picture. It is an elm tree. I had to make it with straight lines so it would be easier to weave. Lisette helped us with our tree and our sheep and our camels.

Pickey

Dear Miss Cooke:

We wanted to make the camel of real camel's hair. We went to the camel shed in Lincoln Park. The camel's hair was dirty. We got wool off the camel. Walter, our Big Brother, took pictures of the camel. It stood still. It was posing.

Fred



CAMEL POSING FOR SECOND GRADE
"Walter, our big brother, took his picture."

Dear Miss Cooke

We are washing camel's wool. First we put the wool in the water. Then we took the wool out and put it on the table and pounded it with sticks. We did not use soap. Mrs. Abraham taught us how to wash it this way. Mrs. Abraham came from Persia.

Katia

Dear Miss Cooke

This is a picture of Mrs. Abraham spinning the camel's hair for our rug. We liked to watch her spin.

Elizabeth

Dear Miss Cooke:

I brought a sheep skin to school. We cut some wool off and washed it. We washed it with wool soap. We were very careful not to squeeze it. We tried to make a thread, but we could not. Then Mrs. Abraham spun the wool for us on a spindle. The sheep in the rug are made from this yarn.

Lydia



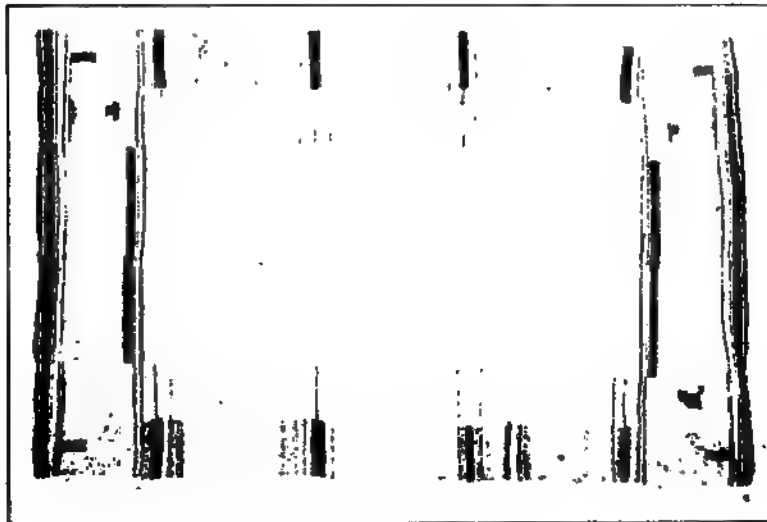
WASHING CAMEL'S HAIR BY WETTING IT AND BEATING IT WITH STICKS

Dear Miss Cooke

This is a picture of Mrs. Abraham making the yarn into skeins for us to dye. Ruth is holding the ball of wool. Mrs. Abraham uses her foot and knee when she makes the skeins. Lisette helped us to weave the designs.

Virginia

As each child wished to send a little message, these imaginative stories were written to Miss Cooke and given with the rug.



COTCH COVER WOVEN FOR MISS COOKE

Dear Miss Cooke:

I am a camel. I am lying down. I am very tired. I have been doing hard work. I've had a nice drink of water and I have had some hay and some dates. I am very happy. I am in Miss Cooke's rug.

Chauncy

Dear Miss Cooke:

This shepherd is blowing his pipe. His sheep are asleep. The shepherd is in the rug.

Gordon

Dear Miss Cooke:

I am an Arab, and I am going to the fair to sell a very lovely prayer rug which was made in Persia. It has very lovely colors in it. These are the colors: Orange, tan, brown, green, black and white. I am on your rug. Can you find me?

Dorothy

Dear Miss Cooke:

I am a shepherd. I live in Palestine. I am taking care of my sheep, and some of them are lying down, and some of them are eating, and some of them are drinking. Sometimes I make music on my pipe. I make my pipe of reeds. Sometimes when it is very cold at night I drive my sheep to the shed. A shed is called a sheep barn. The shepherd is in the rug

Mary

The historic phase of this activity requires a more detailed explanation. The Bible stories are chosen because they give an ideal setting to a study of shepherd life. They are told by the teacher of English. The head of the grade, however, supplies the historic and geographic perspective, so that the children may more correctly picture the country, the life, the customs and the occupations of these early Semitic patriarchs. Furthermore, these stories are ideal, because they describe a small group of people - the life of one family followed through to the third generation. The background is given somewhat as follows: Abraham's call to Canaan is the study of a nomadic hero seeking his fortunes in a new land. This Semitic shepherd is a man of simple faith and steady purpose--a strong contrast to the ordinary Bedouin nomad- and when the children, in imagination, join his caravan, they enter upon a long and fascinating journey. Beginning at Ur, over two thousand years ago, in what was doubtless an over-crowded tropic community, the journey ends on the Nile, with Joseph, now a great man in Egypt, saving his people from utter starvation. It is a journey of strong geographic contrasts. A few stories illustrative of this point are quoted.

THE MOUNTAINS

These mountains are in the north. The mountains are high and some are low. There is snow on the tops. The snow stays there for a long time. Then it melts. It turns into water. The water rushes down the mountain sides. It pushes wood and stones down.

Mary

The melting of the snow on the top of the mountains started the Euphrates River. The water came down so fast that it carried big boulders to the bottom of the mountain. Then it left the boulders and carried good black soil down to Ur. The people planted grain in the good black soil.

John D.

Soon many people heard about the rich soil in the river valley. They wanted to live there too. Pretty soon it was so crowded that Abraham didn't have enough room for his sheep and goats and camels. Abraham said, "I will move away from Ur."

Edward

COMPOSITE READING LESSON

Abraham sees Mount Hermon in the distance. "Oh, look, there's a cloud in the sky," Sarah cries. "Yes, see the pretty white cloud," shout the children. "Watch it," laughs Abraham. "If it moves it is a cloud. If it does not move it is snow on the top of a high mountain." All day the children watch the lovely white spot. It does not move. At sunset it is pink. The children say, "We are glad it is a mountain; we shall see it in the morning." They travel toward the mountain. They watch it every day. The children say, "The great mountain is our guide." One day they camp near it. Sarah says, "How cool it is here. This mountain is our friend." Soon Mount Hermon is left behind, but they do not forget it. They often look back.

Abraham's first stop after crossing the Jordan River is at Shechem. It is in a tiny valley between two mountains: Ebal, 3000 feet high on the north, and Gerizim, a few hundred feet lower, directly south. A newcomer, a migrating chief, will doubtless climb Ebal to view the length and breadth of the land. Perhaps Abraham does this! What he sees from the top of Ebal is told in the words of the children, as follows:

Abraham, Lot, and his chief steward climbed Mount Ebal to look around. They saw the Jordan River in the east. It was away down low. They looked far away to the north. They saw the top of Mount Hermon. They thought it was a cloud. They saw the Lebanon Mountains. They saw the Mediterranean Sea in the west. They looked down the mountains and saw grain fields. Right down below they saw little villages and olive orchards.

Mary B.

Abraham and Lot and his chief servant are looking down into Shechem and they see grain fields and Sarah's black tent.

Martha

When Abraham looks south, he sees Mount Gerizim. He is pointing down to the springs and waterfalls. He hears the shepherds calling their sheep.

Tim

READING LESSON—PREPARATION FOR TRIP TO JUDEA

Abraham looks southward to a high and rugged country—a long stretch of barren table-lands, separated from the plains. To those hills he will go when the flocks have rested and when he has bought grain and figs and oil. Sarah's heart is glad. Meanwhile her hands have not been idle. All day she and her women have been spinning and weaving. Tomorrow they will patch the worn spots in the tents. The next day they will sit at the hand mills grinding grain. Other women will make the dough into thin cakes and bake them over hot stones. Then, early the following day they will fill the water bottles with fresh water, sling them over the side of the kneeling camels, and journey southward.

Additional quotations from the children's papers are inserted to show how they have followed the Bible stories and have pictured the Bible language.

One day when Abraham was sitting under a tree, three messengers came. Abraham rose and went out to meet them. He bowed to the ground. He invited the three messengers to come under the tree. He went to the tent and got a pan of water so they could wash their feet.

Ann

They had a lovely message. The message was that Abraham and Sarah were going to have a baby son, and his name would be Laughter.

Georgianna

Abraham was very unhappy when Sarah died. He said to Isaac, "I want a place to keep Sarah's body. We will have to buy a cave to bury her in." When he was walking in the desert he saw a man. That man had some land. Abraham asked the man if he would sell his cave. The man said, "Oh, yes, you may have it." Abraham went back and got Sarah's body. He put it in the cave. It is still there.

Jean Helen

Abraham loved Isaac. He did not want him to marry a maiden that worshipped idols, because he would grow up to be like her people.

Jeanne

One day Abraham asked his chief steward to go across the mountains and rivers and deserts to get a wife for Isaac. So the next morning, on Monday, he started off early. He thought to himself, "Maybe I

will find one." When the chief steward got to Abraham's old home in Mesopotamia, he really found a wife. Who do you think it was? It was Rebekah, Abraham's cousin.

Mary B.

This is Isaac, running to meet Rebekah, and the chief servant. When Rebekah opened her eyes and saw Isaac, she lighted off her camel to meet him.

Marjorie

As stated elsewhere, the journey with Abraham begins at Ur and ends with Joseph in Egypt. But this great-great grandson is no longer a keeper of sheep. The picture now given to the children shows Joseph as the chief overseer of all the king's land. On Pharaoh's boats he travels up and down the Nile River. Without this river Egypt would be a desert. From it all the fields are watered. As overseer Joseph must know on what date, and how high, the river rises at different places. He therefore visits the irrigating centers. Over all these places he sets a chief. Under the chiefs are many captains. These men repair the shadoofs and keep them running day and night. They also distribute the water to the different farms. To the peasants, or farmers of the land, Joseph goes next. It is his work to help them plow more fields and plant better seeds. Over the farmers he places one man. To him he gives many helpers. A great army of men is soon working under Joseph. Some are buying animals for the plows and threshing floors; others are shaping wooden plowshares; still others are flailing and winnowing the grain; masons are building great storehouses along the river banks. To these granaries come camels and asses, laden with golden grain. While clerks measure the wheat, scribes writing with reed pens on papyrus rolls make a record which Joseph gives to the king. Pharaoh is pleased with Joseph's work. He says, "I will honor your name." He calls his royal scribes. He says, "Write these records on the walls of my palace and in the halls of my temple." Then Pharaoh calls his artists. He says to them, "Paint pictures of me and of Joseph's work on the walls of my tomb, for he has served me well." Joseph bows to the ground. He says, "My work is done; you have given my people a home in Egypt. I thank you, O King."

Bible literature, however, is not the only literature read. Jennie Hall's book, "Weavers and Other Workers," gives un-

ending joy to the children. The book contains many charming shepherd poems by Christina Rossetti, William Blake, and others. It tells stories of Bedouin nomads, of Greek shepherds, of Giotto, the Italian shepherd boy, of Persian dyers and Persian weavers, all of which add immeasurably to the pictures of primitive shepherd life. But the book also contains descriptions of old-fashioned methods of shearing, carding, spinning, and weaving. These stories are supplemented by experiments in washing, carding, and spinning, and by an excursion to the industrial museum at Hull-House, where the children watch Irish and Italian women spin with wheel, spindle, and distaff. In addition, they watch women weaving on different types of looms. Sometimes they have a chance to watch a blind woman putting in a beautiful design. From this excursion the class always gather new ideas for their own designs.



DEVELOP PLAY "THE LOST SHEEP"

All this while, special teachers have been contributing their share to the building up of the picture. Such close co-operation assures opportunity for variety of original expression. The children model clay animals and people for sand-table stories.

Posters of caravans are cut from lovely colored papers. Stories are illustrated and this year backgrounds were painted for puppet plays. For these little plays, gaily dressed clothespins make fascinating actors, and the animals used for the play may be celluloid, clay or cardboard, or they may be cut from folded drawing paper. The picture shows a child giving a puppet play called *The Lost Sheep*. He had read the story once. The play is simply the result of interest and vivid imagery.

Our puppet plays must of necessity be repeated, since only half the grade can see the little stage at once. The following is a stenographic report of a play caught during the second performance.

THE PUPPET PLAY—THE LOST SHEEP

It is warm today. I think I must go and see if it is nice sunshine.

Yes, it is very nice sunshine. (*Looks at the sky.*)

I will go and see my sheep.

Here they are. I think I had better count them.

One, two, three, four, but where is my fifth sheep? I guess I had better go and look for it.

It is not here. I guess I had better go up in the mountain.

Oh, there is another shepherd over there. He may help me. I will call him.

Oh, Mr. Shepherd!

Yes.

Did you see a stray sheep?

No, but maybe I can help you find it. I guess I had better count my sheep. One, two, three, four, five, six. I see there are six. I should have only five sheep. I wonder if one of these is your sheep. (*Calling back.*)

I have got six sheep, but I do not know whether one of them is the lost one of yours, because they all look alike.

Do they know your call?

Yes.

Then you call, and all your sheep will come to you. (*Whistles his call.*) Whoo-hoo! Whoo-hoo! Whoo-hoo!

Yes, these five are all my sheep, but I do not know who that little stray sheep belongs to.

All my sheep know my call. I will call and see if this one comes to me. (*Whistles call.*)

Woo—woo—woo—woo—woo—woo!

Well, I wonder if that stray sheep is my sheep. I guess I had better give my call again.

Woo—woo—woo—woo—woo—woo!

Yes, I guess that is my sheep. I will take him to town.

How I wish I could climb these nice mountains. *Edward B.*



JOSEPH BEFORE PHARAOH

This scene was modelled in clay with figures and background decorated in bright colors. Joseph is kneeling before the king telling him his dream—the servants standing beside the king are fanning him with their long fans.

In this grade bits of voluntary work are called "surprises." As these surprises are always recognized by the teacher, offerings are received almost daily. Frequently the loveliest picture or story is dashed off on the blackboard before school opens. Again the doll, poem or whatnot, may be made at home. Following the lesson on Abraham's birthplace, at Mesopotamia, the following surprise was received:

Abraham was a brave man. He was a strong man, too. He lived in a valley where the people prayed to golden moons and wooden gods. Abraham said, "We won't stay here. We will move, because I can't pray to my God." So they moved.
Jean H.

Flexible group work fosters rather than hinders original expression. Our art teacher is always a watchful gleaner of spontaneous written work. As everyone knows, children with vivid ideas draw or paint very rapidly. When such children finish their work, this art teacher encourages them to tell their stories in words on the opposite side of their pictures. Several descriptions in this outline are products from such art periods.

Sometimes poems and songs originate best in a group lesson. For instance, the teacher writes a simple quotation from the Bible on the blackboard. It expresses joy at finding a well in the desert. The children, after reading it, illustrate it on the

blackboard. Their attention is called to the difference in their pictures—difference in detail, although all expressing the feeling of the same quotation. Then the teacher remarks casually, "The quotation is a very short one. Perhaps you may wish to add something to it." Those who are interested write their thoughts over their pictures, the teacher helping with the spelling. When the thoughts are put together, they make the following little poems:

I love you, oh well!
We will dance,
And we will sing.
We will drink.
This well has given us water.
We will dance and sing around the well,
We will dance and sing around the well,
For we have found water in dry land.

Next day the following lovely surprise is received:

Oh, I love you, well.
Oh, I love you, well.
You bring us sweet water from high,
You run in underground passages,
You are the rain that falls on the mountain tops.

Margaret

The vocabulary and feeling of these poems result from:

1. Sand-table experiments: mountains built of stones, gravel, clay, dirt, etc.; a concealed funnel attached to a long rubber tube; a sprinkler full of water to precipitate a rain storm. Result: a bubbling spring in a dry land.
2. Hearing Bible language.
3. Reading Bible language; short, vivid quotations describing climatic and seasonal pictures.
4. Memorizing Bible language-songs,—*For lo, the winter is past, Twenty-third Psalm*, etc.
5. Blackboard illustrations—large, free work.

The children are so pleased with their poems that the teacher says, "Wouldn't it be fun to make up a tune for these words!" She tells them that people often make songs in this way. They are so happy that they say their thoughts out loud, and the first thing these people know they are humming a tune to their words. The children sit still a few minutes, looking at their poems on the blackboard. Presently a hand comes up, and a child rises and sings his original tune. The teacher exclaims, "Oh, I wish I could write down music as I can words."

With this hint her assistant slips out of the room, and luckily finds the music teacher in the hall. The music teacher caught the following tunes:

He will dance and sing unto it, he will drink with joy and dance, he will dance and sing I
Love ye oh well. Marjorie

Spring up oh well, sing ye unto it, he will sing and dance, joyfully unto it. He will dance unto
it, he will drink with joy he will dance and sing I Love ye oh well Eugene

These poems and songs were used in an original shepherd play given to the school during morning exercise time. As an introduction to the little play, the primary grades sang the following lovely shepherd song, composed by Mr. Charles Cornish for a former Francis W. Parker second grade:

How Sweet is the Shepherd's Sweet Lot
William Blake Charles Cornish

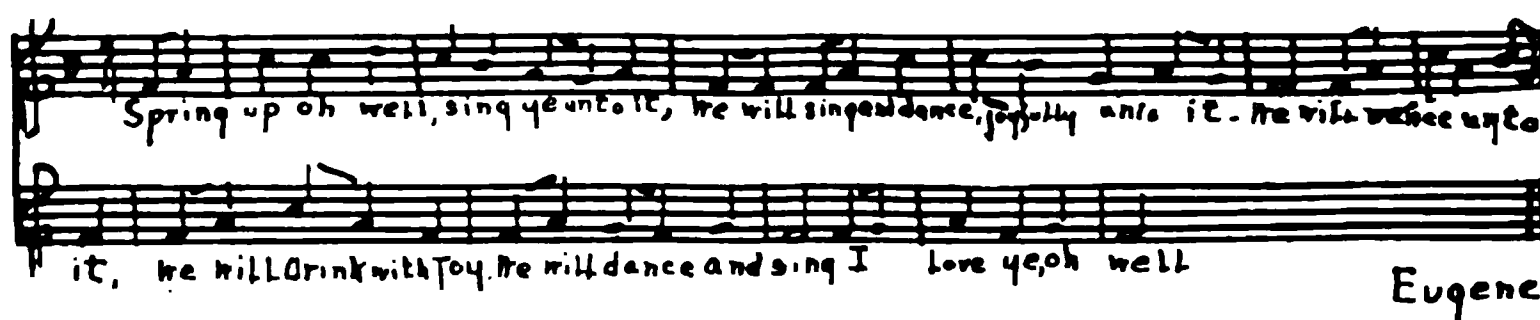
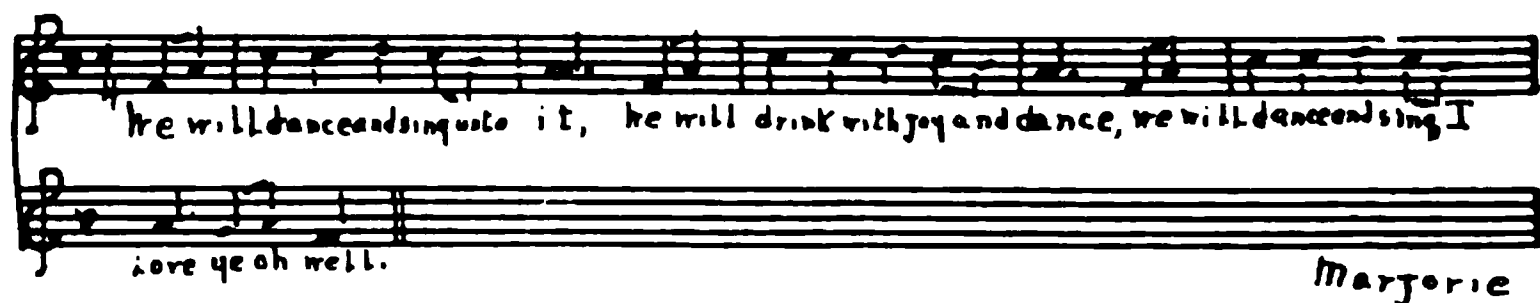
How sweet is the shepherd's sweet
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BIBLIOGRAPHY FOR THE TEACHER

ig Caravan. Echoes of Arabian		
ry	Baerlein	Dutton
y of Ancient Egyptians.....	Breasted	Scribner
he World is Clothed.....	Carpenter	Am. B. Co.
Americans of Yesterday.....	Dellenbaugh	Putnam
s in Arabian Deserts.....	Doughty	Duckworth
Life in Colonial Days.....	Earle	Macmillan
try of Palestine.....	Grant	Pilgrim Pr.
of Allah.....	Hichens	Stokes
and His Blanket.....	Hollister	Hollister
.....	Holt	McClurg
rd Life	Hudson	Dutton
efore Metals.....	Joly	Appleton
a Story of the Navajos.....	Ladd	Meth. Bk.
tion and Fancy Textile Fabrics..	Lord	Van Nostrand
Legends	Matthews	Houghton
n's Share in Primitive Culture...	Mason	Appleton
Egypt	Maspero	Scribner

With this hint her assistant slips out of the room, and luckily finds the music teacher in the hall. The music teacher caught the following tunes:



These poems and songs were used in an original shepherd play given to the school during morning exercise time. As an introduction to the little play, the primary grades sang the following lovely shepherd song, composed by Mr. Charles Cornish for a former Francis W. Parker second grade:

How Sweet is the Shepherd's Sweet Lot
 William Blake Charles Cornish



THIRD GRADE

THE STORY OF THE GROWTH OF CHICAGO

A child who has reached the third grade is ready for a **broad**er conception of home. He breaks the shell of "home" **and** looks out upon the larger life of the community—recogniz-**ing** "home" in this larger sense. It is a big, noisy, bustling, **complicated** thing, this city in which he lives, and he needs to **have** an intimate connection made with the limited "home" **he** has known. Now it is time to reveal to him the slow but **thrilling** processes by which the great city, with its innumerable **houses**, its huge factories, its markets, streets, water mains, **sewers**, has developed out of the simple but fundamental needs **of** foods, shelter, and clothing with which he has become fa-**miliar** in his first and second grade study of primitive peoples.

To trace, therefore, the growth of Chicago through its **varied** changes—from the romantic days of the French explorers, **trappers**, and traders, through the pioneer epoch with its rug-**ged** hardness and dangers, into the village period with its **problems** of water supply and sewage disposal, and on to the **culminating** city with its vast needs and its conflicting interests—this closer study of environment is the natural and alluring **work** of the third grade. And what adds much to the fascina-**tion** of the study, giving it vividness and reality in a natural **way**, is the fact that men and women are still living who have **been** actors in this drama of American life. It is still possible **for** children to see them face to face, and to hear from their lips **the** story of these pioneer days. Here are our museums, rich **in** relics of those days so near to us in point of time, so remote **in** mode of life, and yet so like our days in fundamental prob-**lems**. Finally, there are the places of "historic interest" all **about** us, easily reached and potent in stimulating the interest **and** imagination of young and old. Here surely is a field for **sowing** seeds of good citizenship in these children who not many **years** hence will be the successors of those who have built up **the** great and still only half-developed Chicago. Here is the op-**portunity** to form the habit of thinking historically as well as

observing intelligently and interestedly the life that now encompasses us. It is only a beginning, to be sure, but if, as a child passes from grade to grade, his interest and attention are brought to bear upon new and more complex phases of the civic problem, "education for citizenship" will mean something real and vital. The value of such training lies in the realization that much is still to be accomplished before the city fulfills its obligations to all the men and women and children bound together in its life.

With something of all this in mind we take up the study of Chicago chronologically, trying always to make it possible for the children to live over again the life of bygone times. The stories of Indians, fur trappers, and pioneers, of transportation and early industries, various problems that have picturesque aspects, do more than appeal to the children—they become a vital part of their lives. History, geography, science, all are so closely related as almost to merge into a single experience, pioneer life in Chicago. The purpose is not so much to teach events as to make vivid the conditions under which life was lived in the earlier times; to show reasons for the beginning of the city; to make clear its connections with prior times, its relations geographical and commercial to the surrounding country. Just in so far as this experience is real will the child become definitely conscious that he is a part of a large whole, and that the explanation and meaning of much of his daily life extends back into and is revealed by the past.

No outline of the work can be very satisfactory. It is hoped, however, that from the outline here appended, together with actual reports written by the children, a fairly clear notion may be gained of what is accomplished in the course of the year.

CHICAGO

A. A WILDERNESS INHABITED BY INDIANS.

1. The environment of swamp and sand hills.
2. Water birds and fur-bearing animals of the region.
3. Study of Indian life, emphasizing detail of

Potowatomic Tribe:

dress	hunting
domed huts	games
arts	

B. A TRADING POST.

1. Fur trading.
2. Stories of trappers.
3. Stories of French voyageurs.
4. Mr. Kinzie comes to Chicago.
5. Building Fort Dearborn.
6. Tecumseh.
7. War of 1812.
8. Massacre of Fort Dearborn.

C. A PIONEER SETTLEMENT.

1. Coming of settlers.
2. Methods of travel:
 - ox cart
 - prairie schooner
 - sledges
 - flatboats
 - pack horses
3. Mr. and Mrs. Kinzie's traveling experiences.

D. A VILLAGE.

1. Needs of a town:
 - methods of obtaining water
 - paving problems
2. Appearance of Chicago in 1831.

E. A CITY.

1. Needs of a city:
 1. roads
 2. buildings
 3. illumination
 4. water supply
 5. drainage
 6. transportation

To develop A-1 and 2 and B-1 of the above outline, excursions were made to the sand dunes, a swamp, the Lincoln Park Zoo and Bird House, the Academy of Sciences, the Field Museum, and Marshall Field's retail fur section.

The wild rice, game and water birds still found at the dunes indicate how the unlimited supply of these in early days furnished abundant foods and attracted animals and Indians whose

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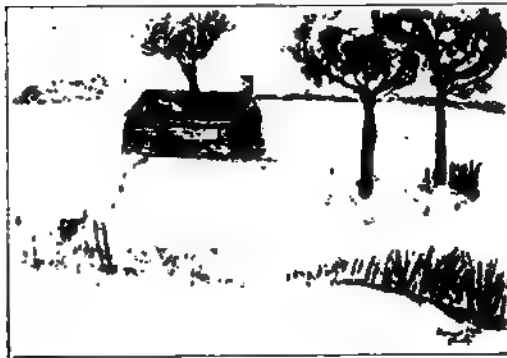
arts

hunting

games



FORT DEARBORN



LOG CABIN

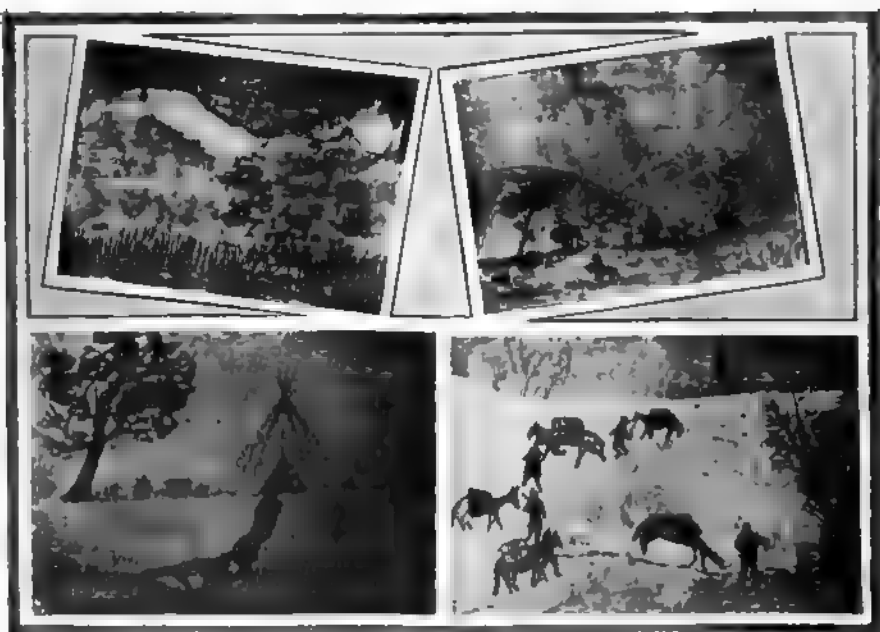
A study was made of game and water birds. An excursion to the Lincoln Park Bird House, where the children saw the live birds, and a visit to the Academy of Sciences, where are the mounted specimens in their natural habitat together with numerous books formed the basis of study. A chart was made, giving definite references to books, chapters, and pages dealing with each bird. Each child chose a bird to report on. When the necessary information was obtained as to the habits, food, homes, characteristics and economic value, an article was written. Paintings were made from mounted specimens. The articles were mimeographed, and, with sketches, were put into book form.

In taking up the study of animals hunted and trapped for their furs, after a general discussion each child selected an

presence was an incentive to the coming of the fur traders. The trip to the dunes was made in the fall, and upon our return each child wrote a report of it. One was in this form:

Fort Dearborn was built on a high peak of land
Which overlooked the dunes and sand.
There the soldiers used to stay,
To protect the traders day by day.
Chicago was then the Indians' home.
The Buffalo o'er the plains did roam.
The Indians hunted them oft for food,
With bows and arrows, weapons crude.
In the swamp the reeds and cattails grew,
The turnstone and sora rail lived there, too.
The Indians came in the birch canoe,
To get the wild rice, white and new
In those days the people in houses were few,
And the streets were just roads, we are told;
There were many fields where the wild flowers grow.
So was Chicago, Chicago of old.

P. W.



HUNTING ANTELOPE
INDIAN TEPEE

HUNTING BUFFALO
FUR TRADING

trappers, their courage and cheerfulness in hardship and danger, their resourcefulness in meeting difficulties, furnishes an appeal that quickly arouses and holds children's interest. As a result of the work of that period, a group of children wrote this story for our school *Record* (student publication) :

This is the story of our experience on our first fur-trading trip. Our equipment consisted of ammunition, guns, traps, blankets, tents, provisions, and canoes. We took six or seven French voyageurs to help us along. They were brave and courageous men; also jolly and willing workers. We left rather late in the autumn, and were very much afraid of the coming snow storms and the cold weather which would freeze the river water. The freezing of the river would force us to leave our canoes behind. We paddled along for several weeks occasionally sighting herds of buffalo in the distance. The sky for days had looked dull and gray, and we were expecting a storm. We finally landed and had our voyageurs pitch our tents, while we had our supper of pemmican and deer meat. The following day some Indians who had been hunting buffalo passed. We bought some ponies of them. We left the canoes and started for the Indian camp, where we bought meal and other provisions. As we had been greatly delayed by the shooting of many rapids and the crossing of portages, our supply of provisions had run low. After traveling for several days, the storm we feared came upon us. We woke one morning and found it snowing heavily. We sent some of our men out to get game. After twenty-four hours had elapsed, they returned, bearing a few antelopes. We asked the men how it came they were so successful. They replied that it was simply luck. When the snow began, the antelopes began to tramp down the snow, but all the time the storm was raging, so the snow had formed a wall around the antelopes. It was then easy to shoot them in a kind of trap of their own making. We were kept in camp for ten or twelve days. As our supplies ran low, we had little food for the ponies and we were forced to use some of them for food. We were hoping for a thaw which would be followed by a freeze. This would harden the crust of the snow, which would enable us to travel more easily. At last we were able to resume our journey toward the coast. One day we spied an Indian encampment. We approached the Indians. The chief passed us the pipe of peace, which we smoked. That evening there was a feast prepared in our honor. Presents were expected from us, so we gave the Indians many trinkets. Next day we traded. When we had finished trading, we had about five thousand dollars in beavers. From our own trapping we had twenty beavers, twelve foxes, thirteen pine martens, and one silver fox. Silver foxes are very rare, so we were lucky to get one. We started once more for the Coast, and after several weeks arrived there safely.

The following morning exercise was given on fur-bearing animals:

In early Chicago, many fur-traders came to get furs and to trade with the Indians. Mr. Kinzie established a number of fur-trading posts all around the country, and the French voyageurs went out to collect furs for him. We have been studying about fur-bearing animals and those whose pelts were valuable in early days and still are. Each child had an animal to study. We read from different books. We had note books and we took notes as we read. We looked for food, home, habits, and appearance. We looked for the value of the fur and the value of the animal to man. After we had gotten all our material together, we wrote a story about our animal. All of our stories will be put together in a book on *Fur Bearing Animals*, and will look something like this.

Marjorie



MORNING EXERCISE ON FUR BEARING ANIMALS

We made excursions to the Field Museum and to the Academy of Sciences, to see the mounted animals there. We also went to the Lincoln Park Zoo to see the North American fur-bearing animals. Most of the animals we wanted to see were still hibernating. There were three badgers in a hospital, but Mr. Parker said we could not see them, as it was not safe for children to go into the hospital. They had a Colorado bob cat there but he liked his nice warm box so well that the keeper had to poke him with a stick to get him out to introduce him to us.

We went to Marshall Field's fur section. We saw a great many mounted animals there—beavers, muskrats, fishers, otters, minks, ermines, weasels and animals like that. We then went into their cold-storage rooms, and we saw many different kinds of furs there. They gave us little souvenirs. They were pen-wipers, with different kinds of fur buttons on them. We then saw them cleaning furs. When they clean furs, they use some very fine sawdust, with cleaning fluid of some kind on it, and put this over the furs. Then they blow that out of the fur with compressed air. We saw them making some neck pieces, and we saw them making a coat. They had a large board, and on it was nailed a muskrat coat, with the fur inside. And on another board they had nailed the collars and cuffs and sleeves. These were dampened and stretched.

Virginia

The animals we have been studying about were either meat-eaters or gnawers. The meat-eaters, or carnivorous animals, have large canine teeth like these (holding up the skull of a lion). Some of the animals with large canine teeth are the wolf, the fox, the dog, the cat, and the lynx. The gnawers have incisors to gnaw with. Some of them are the beaver, the muskrat, mice and rats. The family is called rodentia.

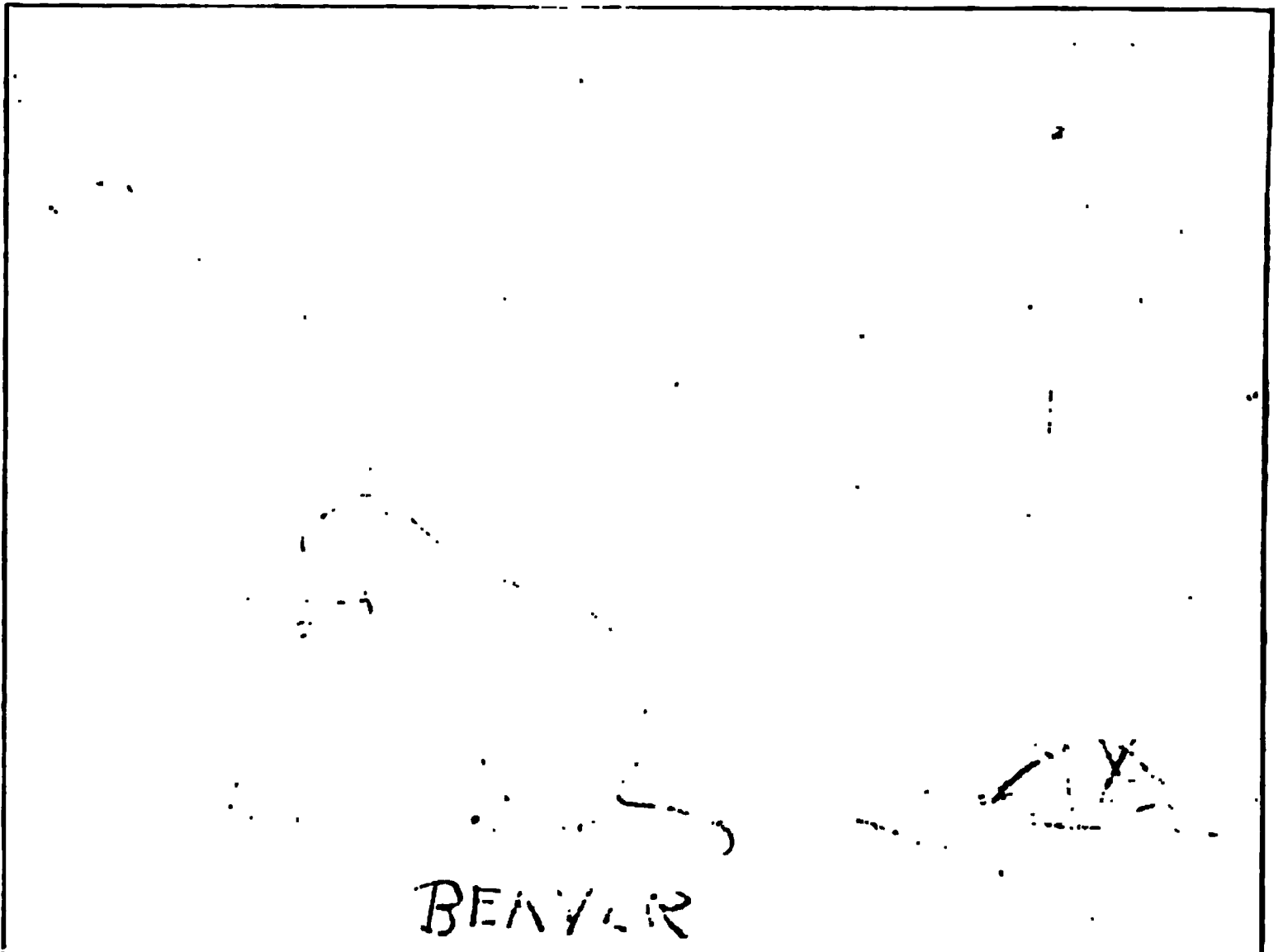
Otto

The muskrat lives in a hole in the bank of a stream, or he lives in swamps. His house looks like a small haycock. It is made of sticks and rushes and grass plastered together with mud. His entrance is under water. This is a picture of some of the muskrat houses. His food is mussels, and vegetables, and grain and sweet corn. He is a very clean animal. When he finds some bread that somebody has put out, he will stick the bread in the water before he eats it. He likes to swim around in the water, for his home is always near the water, and in winter he cuts a hole in the ice so that he can get back and forth to his home. He is of little use to farmers, except his pelt. When a trap is set for him, it is usually put near the entrance of his home in the water. This is the skin of a muskrat my brother had. You can see how it is stretched over this wedge-shaped board. Coats are made of the natural skin of the muskrat. When the guard hairs are plucked, and the under fur is dyed, the fur is then sold as Hudson seal.

Alexander

The beaver is one of the rodent family. He is a gnawer. He builds his home in a stream, where there are trees and branches to make it out of. He builds it out of sticks of mud or clay. Here is a picture of a beaver at work. In this you can see the beaver's tail. He uses his tail for three things: As a rudder in swimming, as a brace when he is cutting down a tree, and as a signal to other beavers when there is any danger, by clapping it on the water. This picture shows the beaver gnawing. You can see his large incisors. He likes to live where there are trees, so he can cut them down and float them to his home or dam. This picture shows a beaver dam. He makes a dam because he wants the water deeper, so he can get away from his enemies by swim-

ming' under water, and he has his food stored down there in the winter, and the water has to be deep enough so that it will not freeze. This shows (holding a piece of a gnawed tree) how the beaver gnaws the trees. You can plainly see some of the marks of his teeth. In this picture, he is using his tail as a support. Here is another piece of wood that a beaver has gnawed. He likes to eat the bark off of the trees. He likes poplar trees, and aspen and birch, and lily roots.

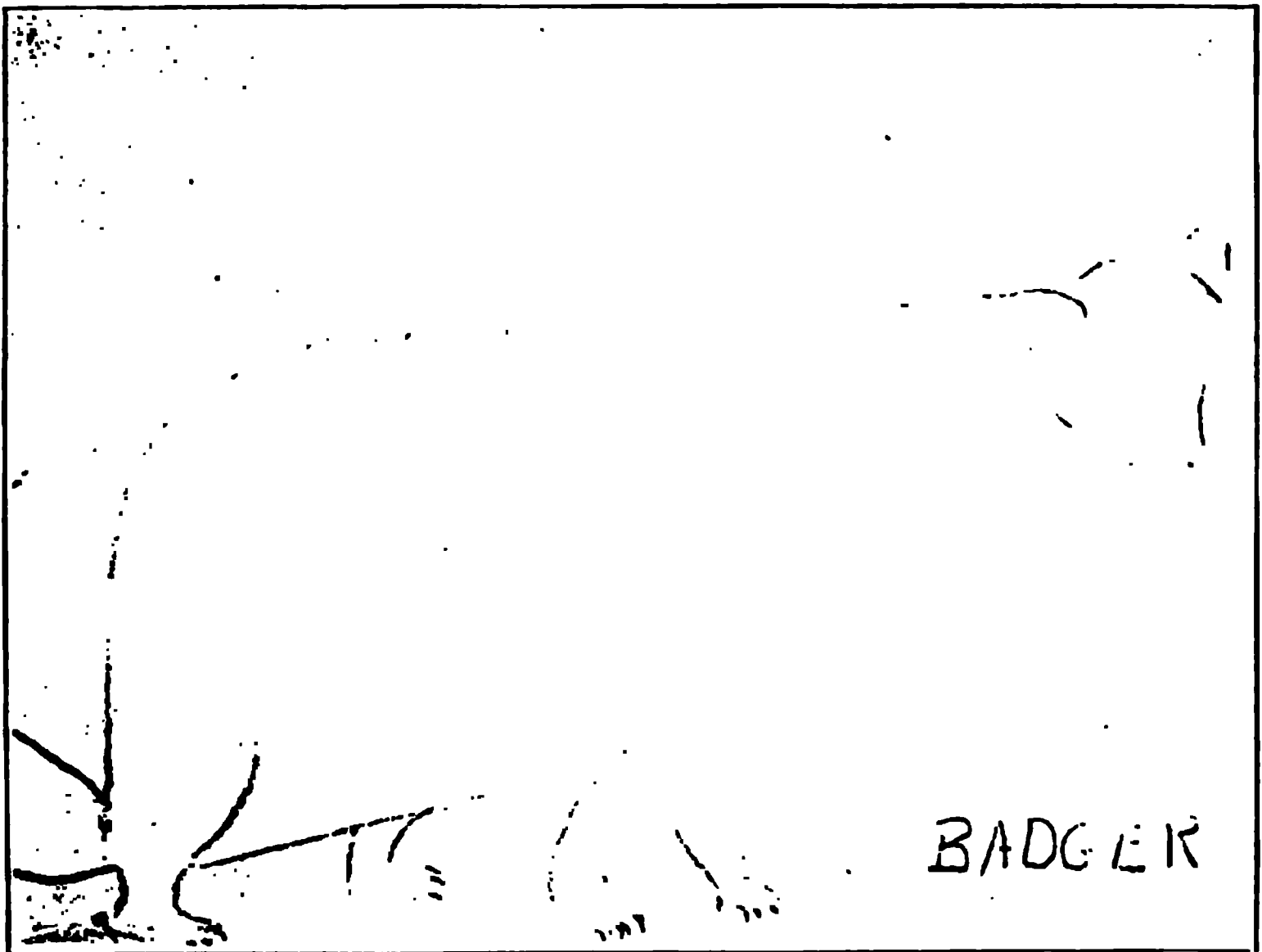


There are two kinds of beaver, the North American and the South American. The South American beaver is smaller, and his tail is not so wide. This is a picture of the South American beaver. His fur is not so long nor so thick. The fur of the South American beaver is called nutria. The North American beaver has longer and thicker fur and a wider tail. His tail is about eight inches long and four or five inches wide. The tail of the South American beaver is eight inches long and is about an inch and a half wide, and is flat.

Junior

The badger looks at night like a big black shadow, and in the day time when he is lying down, he looks like a big white stone. His food is ground squirrels, mice, rats, berries, and all sorts of insects. His favorite food is honey. When he gets it, the bees try to sting him, but his fur is so thick that they cannot hurt him. His fur looks like silver and ebony in the night time. In the day time he is black and white and brown and sometimes gray. His home is in the pine forests. He is useful to farmers, because he eats so many insects that are injurious to trees, and so many mice. His fur is used for collars and trimming, and shaving brushes are made from badger hairs.

Mary



The wolverine's fur is darkish brown. He has very sharp claws. His claws are black, and they are long—over an inch long. The wolverine has little ears, and his nose is long. Once a trapper went out of his house, and when he came home he found everything was gone. The wolverine had taken everything out of his home and left only the walls standing. Then the man followed the wolverine's tracks and got back most of his things. The wolverine will follow a trapper, and every trap he will unset, and take the food out without getting hurt. He is a great nuisance to trappers, because he steals so many animals that have valuable furs.

Fred

The fisher is the largest member of the weasel family. He likes frogs and mice and birds. He will also eat porcupines. He tries to turn the porcupine over, because underneath it is soft. The porcupine sticks him with his quills, but the fisher will not give up until he succeeds. The quills of the porcupine are poisonous to other animals. The fisher gets many in his nose and paws, but the quills do not seem to poison him.

The fisher lives in the hollow of a tree, and his nest is built with sticks and leaves. He can jump very high from the ground, and loves to be in the tree tops. Most of the fisher pelts that the trapper gets have porcupine quills in them. His fur makes a very valuable and beautiful neck scarf.

Dorothy

The lynx is a great big cat, and his fur is spotted. His food is squirrels, rabbits, mice, and he likes larger animals, but he will not attack a deer or a large animal unless it is wounded. He is very much of a coward. The lynx has four or five babies a year, and the home is in a hollow usually at the bottom of a tree. This picture shows the lynx taking some game home to his babies. In this picture you can see how the lynx likes to lie out on the limb of a tree and watch for his food.

Jessamine

The skunk is an animal about as big as a cat. His fur is black, with white stripes running from his head to his tail. He eats frogs, mice, squirrels, and chickens. Some people think that the skunk is not a clean animal, but they are mistaken. Some people visited a fox farm and found the place very unclean, but they visited a skunk farm and they said it was a pleasanter place to visit, and that the skunk was a very clean animal. He only uses his odor to protect himself. When two skunks fight, they fight fairly, and they do not use their odor on one another. Skunk fur is sold as marten.

Lydia

The red fox lives in a hole in the ground. He is a very tricky animal. One of his tricks is to go across very thin ice when dogs are following him, and the ice will break with the dogs, and the current will draw them under and they will drown. The fox is very sly. When there is a fox hunt he will circle around the dogs and hunters and watch them, and they will think that he is ahead of them. He eats rabbits, mice, poultry, and robs birds' nests, and he eats woodchucks, frogs and beetles, and when he cannot get anything else he will eat fruit. His fur is a reddish gray and his skin is not very valuable. It is used for scarfs.

Virginia

Red fox parents may have babies that are cross foxes, silver foxes, or red foxes, but people have found that silver fox parents always have silver fox babies, and so many men have gone into the silver-fox farm business. The red fox, the cross fox and silver fox may all be of one family. The silver fox fur is very valuable.

Richard

The marmot or woodchuck is a very interesting animal. The woodchuck eats vegetables, roots, tender shoots, and all kinds of plants and sometimes berries. He is a hibernating animal. Maybe you do not know what hibernating means. Hibernating means that the animals will sleep all winter long. He eats a good lot in summer time, and gets fat, and then in winter time when it begins to get cold he will go to his home and stay there for six months and maybe seven. Hibernating means that when he goes to sleep his heart slows down and his muscles don't work, for the muscles never work without food. If you put your hand on your pulse, you will feel your heart beat, but when an animal is hibernating the heart seems to stop. In February he wakes up and comes out to see

what the weather is. If he sees his shadow, he goes back and sleeps again. But he finally comes out in the spring, and gets ready for the next winter by getting fat.

The woodchuck lives in the ground. He digs his home 25 feet down and then goes off in a different direction. He brings up some clay and builds a little mound on top of the ground. Then he will stand up on the mound on his hind legs and his forepaws up. If the mound is high enough he can see if an enemy is coming. If he sees an enemy he will drop right down into his burrow. As soon as the enemy is gone, he will come up again. The skunk is one of the fiercest enemies that the woodchuck has, and the woodchuck will run away from a snake. Most of the marmot fur that is used for coats and lining is made from the European marmot.

Ruth

The otter belongs to the weasel family. He is four or five feet long, and his tail is long and round. The otter's fur is used unplucked, and is one of the most durable furs. But sometimes it is plucked and dyed. Then it looks something like a Hudson seal, but it is heavier. The otter is a very playful animal. He will slide down snow banks in winter, and in summer he likes to find a clay bank and slide down into the water. His food is fish and frogs, and sometimes he will eat water fowls or rabbits. And if it is impossible to get any of these, he will eat chickens.

This is a story I wrote about an otter:

One day two little hungry otters stood on the bank of a stream in the woods. Their mother, with her smooth brown coat of fur and her short legs, stood on the bank watching the stream. Her sharp eyes soon discovered a large salmon gliding lazily through the water. She dived like a flash and with one fast bite in the back of the salmon's neck secured a meal for her hungry cubs. The salmon quivered and died in the otter's jaws. The mother quietly swam to shore with her prey. The hungry cubs lost no time in devouring it. The mother was still hungry, because the cubs had greedily eaten the entire fish. Only the bones were left in the soft white sand, so she went in search of her own dinner. She left the romping cubs in the grass and quietly slipped away through the underbrush to a different pool, where there were some old trout which she liked very much. These trout she knew were lazy, and she usually found them at the bottom of the pool, where they were watching for the chance to feed on their young. Then she returned to her cubs, who had not noticed her absence, and headed them for the shallowest pool she could find in the forest. Slowly she went in and swam to the other side of the pool. But the cubs were afraid to go near the water. Their mother then took them on her back and swam out. She then dived and the babies had to swim.

Once the otter was a land animal, but as the hunting was poor on land she adapted herself to the water. So she has to teach her cubs to swim. The otter is one of the most graceful animals in water. When it dives, there is no ripple to mark its disappearance.

Jane

How many know this animal (pointing to a picture)? *Answer.* Coon. Yes. The raccoon fur is a valuable fur, because it is thick and very long. The fur is being used more and more every year for coats. Here are several raccoon coats.

Robert

This skin is what they call Hudson Bay sable, but it really is marten. This is an European sable scarf. When you buy a fur called marten, you usually get a skunk fur. If you want a real marten fur, you must ask for a Hudson Bay sable.

Elizabeth

In the study of Indian life, outline A-3, an Indian book by Hopkins was used the first part of the year. The book was taken apart, and a chapter (a complete story in itself) was given to each child. It was the duty of each child to present a report to the group. Large paintings were made to illustrate the subject. Models in clay were used; also twigs and cloths to represent the homes. These subjects were covered: An Indian home, method of traveling, making of pottery, weaving, dressing skins, hunting buffalo, hunting antelope, buffalo dance, hunting wild horses, making pemmican, storing food, hunting prairie dogs, swimming, shooting, games, etc.

The following plan for a series of lessons on pioneer transportation, point C-2 in the outline, was worked out by an assistant under the supervision of the grade teacher.

Point 1. Why did people come west?

- a. Because soldiers returning from the war of 1812 brought news of fertile plains and unwooded prairies to their friends in the East.
- b. Because of the ever-increasing population that demanded an outlet.

LESSON 1. Why did people come west?

1. Ask questions and consider each answer carefully.
2. Show pictures of eastern as contrasted with western farm lands. Let children compare what is seen in each picture and draw their own conclusions as to which they would prefer, and why. Which would a farmer prefer, and why? (Use pictures of New England and Illinois farms.)
3. Pass to sand tray to study topographical map. Show New England and the other colonies. Compare area with that of Mississippi plains. Use sand map of United States showing mountains and river valleys. Tell of continued immigration from across ocean. Point out the fact that more children are being born constantly; let children decide what would result, and next how the congest-

tion could be relieved. Point out horrors of the unexplored mountains, to give some idea of how much harder it was to cross those little humps of sand than they imagine. How could it be accomplished?

4. Return to seats and summarize, either verbally or on paper.

Point 2. By what routes did they come west?

- a. Those previously traveled by Indians and hunters.
- b. Those which crossed the mountains at the lowest points.

LESSON II. How could people cross those mighty mountains that barred the path in every direction?

1. Consider each answer carefully. Ask questions.
2. Pass to sand tray. Ask children if any way looks easier to travel than the rest? Why?
3. Sprinkle white sand along main routes as the children indicate them, letting the sand represent people traveling west.
4. Also sprinkle white sand thickly over eastern portion at that time inhabited.

LESSON III. To fix in minds of children the routes discussed yesterday—

1. Run in slide, giving relief map of the United States. Let children, with pointer, follow out same routes as yesterday. Discuss and discard poorer ones.
2. Retain the four main lines of travel. Repeat several times to fix in mind.
3. Take outline maps and mark with red these routes, indicating portages by dotted lines and river travel by straight lines.

Point 3. How did people travel then?

- a. By side-wheel steamers and by rear-wheel steamers.
- b. By Mackinaw boats on small streams.
- c. By pack horses.
- d. By flat boats on the Ohio.
- e. By prairie schooners overland.
- f. By ox carts.
- g. By sledges in winter.

Point 4. What did they carry with them?

- a. Salt—why?
- b. Flint and steel—why?
- c. Axe-head—why?
- d. Compass—why?
- e. A few cooking utensils.
- f. Blankets, tent.
- g. Such other articles as they had room for, the non-essentials, varying in size and quantity and quality according to individual preferences.

Point 5. What kind of men were they?

- a. Independent.
- b. Self-reliant.
- c. Courageous—enduring freezing cold weather.
- d. Sagacious, able to tell direction when lost.
- e. Fearless and strong.

LESSON II. Tell first installment of Mrs. Kinzie's journey from Detroit to Chicago in 1833, as given by herself in *Wau-bun*, Mrs. Kinzie's travels through Lake Erie and Huron to Mackinac on the *Henry Clay*.

Put a chalk map on board, of Great Lakes, on which to indicate Mrs. Kinzie's progress, using the following pictures: Indian village, storm ox cart, and steamboat.

LESSON I. To fix yesterday's lesson—

1. Let children recall story, smoothing out each other's difficulties as they arise.
2. Take out pads and pencils and write story to put into history of Chicago.

LESSON II. To revivify images and restock the imagination with fresh material after yesterday's writing—

1. Show slides of early steamers both rear and side wheelers. Compare with modern steamers. Show picture of modern steamer to verify comparison.
2. Finish writing stories.

LESSON III. Tell second installment of Mrs. Kinzie's journey taking her from Mackinac to Green Bay in a steamer, and from Green Bay to Fort Winnebago in a Mackinaw boat rowed by a crew of French Canadians.

Give all the picturesque incidents possible (as taken from *Wau-bun*) to give scope and variety; enough to fasten something in each child's imagination.

Have map on board as previously indicated, using following pictures: Camp at night; rapids in river; and other pictures as given above.

LESSON IV. To fix yesterday's work. Write on board as children dictate the story, giving them full scope to criticize one another's mode of presenting the thing. Show picture of Mrs. Kinzie in Mackinaw boat which men are pulling against a strong current.

LESSON V. Continue yesterday's work and complete second installment of Mrs. Kinzie's journey.

LESSON VI. To clarify images, paint pictures of Mackinaw boat and camp fire made on side of river. Show pictures again. Let children stand in approximate corners of imagined boat, to give idea of size.

LESSON VII. Tell the third installment of the story, taking Mrs. Kinzie from Fort Winnebago to the Fox River Indian village, where they were lost in a blizzard. Work out divisions; choose parts.



TRAVELING IN A SLEDGE

Use map on board as before, leaving portion of journey so far traveled so as to compare distances covered by boat, horse, and Mackinaw boat and also time used by each. Add following pictures: Indian trail; night spent at fur-trader's house.

LESSON XII. To vary scheme, let children divide story into short stories and choose. Write the parts chosen yesterday.

LESSON XIII. Finish writing stories.

LESSON XIV. Review.

1. Let children tell the story of Mrs. Kinzie's travels, as a review, using the return of hitherto absent children as an excuse. Watch to see how much is digested, how much mere repetition.
2. With this as a background, tell last installment of story, bringing Mrs. Kinzie safely to Chicago.
3. Count symbols on map, indicating night encampments. Find that Mrs. Kinzie took eight and a half days to come from region near Madison. How many have been to Madison or Milwaukee? How long did it take?
4. Bring out reasons for length of time; also
 - a. How to tell directions.
 - b. How to foretell a storm.
 - c. How the party cut their way across frozen streams.

LESSON XI'. Let children again divide and choose parts to write.

LESSON XVI. Paint picture of Mrs. Kinzie's party on horseback going through woods and snow. New picture of the Kinzie party on horses lost in wilderness of snow.

LESSON XVII. Give children opportunity to better their pictures if dissatisfied. Bring in plaster model of horse to draw first on trial paper.

LESSON XVIII. Review.

1. Run through slides of *Henry Clay* steamer, ox cart, Mackinaw boat, pack train, letting a child tell the story of each slide.
2. Bring out the various modes of conveyance used by Mrs. Kinzie. Which would children prefer? Work out whole length of journey, and then tell how many hours it takes today.

LESSON XIX. Various routes.

1. Take out maps of routes, and discover other routes of travel besides Hudson River-Great Lakes one.
2. How could men climb mountains?
3. How could men go down the Ohio River on other side? Easier or harder than going up Fox River?
4. Show model of Ohio flat-boat made last year. Compare with Mackinaw boat. Why the difference?
5. Show size of Ohio flat boats on slides.

LESSON XX. Prairie schooner as used on Cumberland Gap routes.

1. Trace their route on map. Surmise as to best conveyance after study of other routes.
2. Show prairie schooner slides and model. Why best fitted for that route?

The following story is the outcome of the preceding work. Parts of it were taken verbatim from the children's dictation, and parts were rearranged by the practice teacher:

MR. AND MRS. KINZIE'S TRAVELING EXPERIENCES

The Mr. Kinzie that this story is about is the son of John Kinzie, the fur trader. This story is about him when he is married and grown up. Mr. and Mrs. Kinzie were in Detroit with some friends and were listening to their stories about men who had been becalmed and other people who had been caught in a storm. But they only laughed at these stories. They went down to the dock and were glad to see a beautiful boat. That is, to them it was beautiful. Their friends wished them a successful journey. The boat had two cabins. Its name was the *Henry Clay*. One of the cabins was for men and the other for women. They had a nice journey for a little while, but after a while they struck a storm and it began to get dark, and the rain began to come down in little streams from the roof in the ladies' cabin. They had to stand in a corner, and then the water began to come down there, too. They had to climb in the berths, and for a while it was safe, but soon it began to leak there, too. They at last went into the men's cabin. They told Mr. Kinzie and the other men about the awful time they had had. They had to go into the berths again. There they kept dry. The next day they went on deck. They saw green shores but no houses. Once in a while they saw an Indian tepee. Finally they reached Mackinac Island. They were happy to get out of the wet boat. The dock was full of Indians who were friendly to Mr. Kinzie. They smiled when they saw them, and said: "Bonjour, Monsieur John."

The Kinzies went from Mackinac Island to Green Bay in the *Henry Clay*. It took them several days.

Mr. Kinzie was the agent for the Winnebago Indians. He was going to stop at Fort Winnebago, to pay them for the land our govern-

ment had bought from them. The Kinzies were going to take a Mackinaw boat from Green Bay to Fort Winnebago. A Mackinaw boat is oblong and thirty feet long and about seven feet wide. In the middle of the boat a canvas is stretched over little poles. It looks like a small cabin. Mrs. Kinzie's piano was in a box under the canvas. Mrs. Kinzie was a musician, and she wanted to take her piano with her. They put a mattress over it and used it as a couch in the afternoons.

On each side of the boat there were French voyageurs and soldiers rowing, and the voyageurs sang songs to keep time with the oars. Mr. Kinzie helped to row. He helped a soldier who seemed very weak and looked as though he had run away from home. They came to many rapids and the bourgeois would call "Men overboard." Then the men would have to jump out and pull the boat up the rapids. They were going against the current all this time and it was very hard to row. Sometimes the boat got stuck between two rocks, and the men had to get out and push it through. Sometimes the rapids were so swift that the men had to take everything out of the boat except the piano and carry it around. Sometimes they would have to pull the boat along with ropes. The first night they stayed at Mr. Grignon's house, at Kakalin; the other nights they camped on shore. The Kinzie's had one tent and the soldiers another. This was the first time Mrs. Kinzie had ever been West and camped out-of-doors. They had a fire in front of the camp. Mrs. Kinzie thought it was very beautiful. She sketched a picture of the river with the sun shining on it.

The French voyageurs cooked ham on sticks over the fire. They ate from tin plates and drank from tin cups. In the morning the bourgeois would call, "How, how, how!" as loud as he could, to wake the people for breakfast. After eight days of such traveling, they came to Fort Winnebago. Mr. and Mrs. Kinzie lived at Fort Winnebago all that winter. In the spring they decided to go to Chicago, to see their mother and father. First they baked biscuits and boiled ham. They decided to go by pack horses. They took two men. One was named Plante, who was the guide, and the other was named Pierre Roy. Plante was supposed to know the way, but he did not. Mr. and Mrs. Kinzie each had a horse. They also took one pack horse. To the pack horse they tied several bundles of biscuits and their hams. Each one had a tin cup on his saddle bow. The men each had a piece of flint in his pocket and a piece of steel. They planned to follow some Indian trails.

They took a tent, so they could camp. Mrs. Kinzie had a hunting knife hung around her neck. Behind the Fort was a little creek called Duck Creek. They carried their canoe on an ox-cart. When they came to the creek, they took the canoe off the cart and put it into the water. Then they put the trunk into the canoe. Mrs. Kinzie thought it would be best to sit on the trunk, but just as she got into the canoe, some dog jumped into her lap and upset the canoe. Mrs. Kinzie got all wet. Mr. Kinzie had to carry her over on his shoulder. Mr. Kinzie asked her if she wanted to go back to the Fort. She would not go. She rode all

day in her wet clothes. It was growing cold, and she had on kid gloves, and her hands were swelling from the cold. After they had ridden a long way, they found a place to put up their tent. They made a fire by striking flint and steel together; they put Mrs. Kinzie's coat near the fire to let it dry. It froze stiff. It looked like Mrs. Kinzie standing there. For supper they had ham and biscuits. The biscuits were used as plates. They cut the ham on the biscuits. They stirred their coffee with their knives. Before they went to bed, they tied their horses' front and back legs together so they could not run away. Then they rolled up in their blankets under the tent and were very comfortable.

While riding, they sometimes saw one or two prairie wolves or deer, and the dogs would chase them away. Once in a while they came to an Indian village. The Indians came out and asked Mr. Kinzie for bread. But Mr. Kinzie did not dare give them any because they hardly had enough for themselves. Mr. Kinzie told them so in their Indian language.

The second night they reached Mr. Morrison's house. They stayed there all night. Before leaving the next morning they asked for more biscuits. They were afraid their supply would run out. The next day it snowed hard. Mr. and Mrs. Kinzie could hardly see the trail, but they went on. They had been told to keep on until they came to another trail, but they could not find it. Finally they made camp and had their supper and went to bed. It kept snowing. In the night the tent poles broke, and the tent fell in on them from the weight of the snow. Mr. Kinzie had to cut new poles. In the morning they went on. Then Mr. Kinzie saw that Plante, the guide, did not know the way, so he took the lead. They did not eat much, because they had not much left. Toward night they saw a fence. They were very happy, because they knew there must be a house near by. They asked what place it was. They found out it was Mr. Hamilton's house, the very place they had meant to reach. This shows what a good woodsman Mr. Kinzie was and how well he could tell directions.

When they came to the Rock River, there was a ferry boat. It was just a little row boat. A path was cut in the ice so that the boat could run. It was sunset as they crossed. The sky was yellow and red; so was the streak of water where the ice was cut away. The horses swam across the river. That night they stayed at Mr. Dixon's house. The next day they lost their trail. They wandered all day. Toward evening of the second day, Mrs. Kinzie's horse began to kick and jump and didn't want to go any further. Then Mrs. Kinzie knew that there were Indians near, because her horse did not like them. Just then a little Indian dog ran out to meet them. Then they went behind the bushes and found two Indian squaws. They were digging Indian potatoes.

Mr. Kinzie asked the squaws where they were, but they did not know. Then Mrs. Kinzie asked where the squaws lived, and they said, "Across the river." Mr. Kinzie was glad, because he knew they must have a canoe there. He asked them if they had a canoe, and they said,

"Yes, but a very little one." So the squaws paddled them across, one at a time. On the other bank was an Indian village. Here they were able to get something to eat. It was the first time they had eaten for two days. The Master of the lodges guided them to the nearest cabin on the following morning. From here they knew the trail to Chicago. It took them eight and a half days to make the trip that it takes us only five hours to make.



MR. FINZIE'S HOUSE

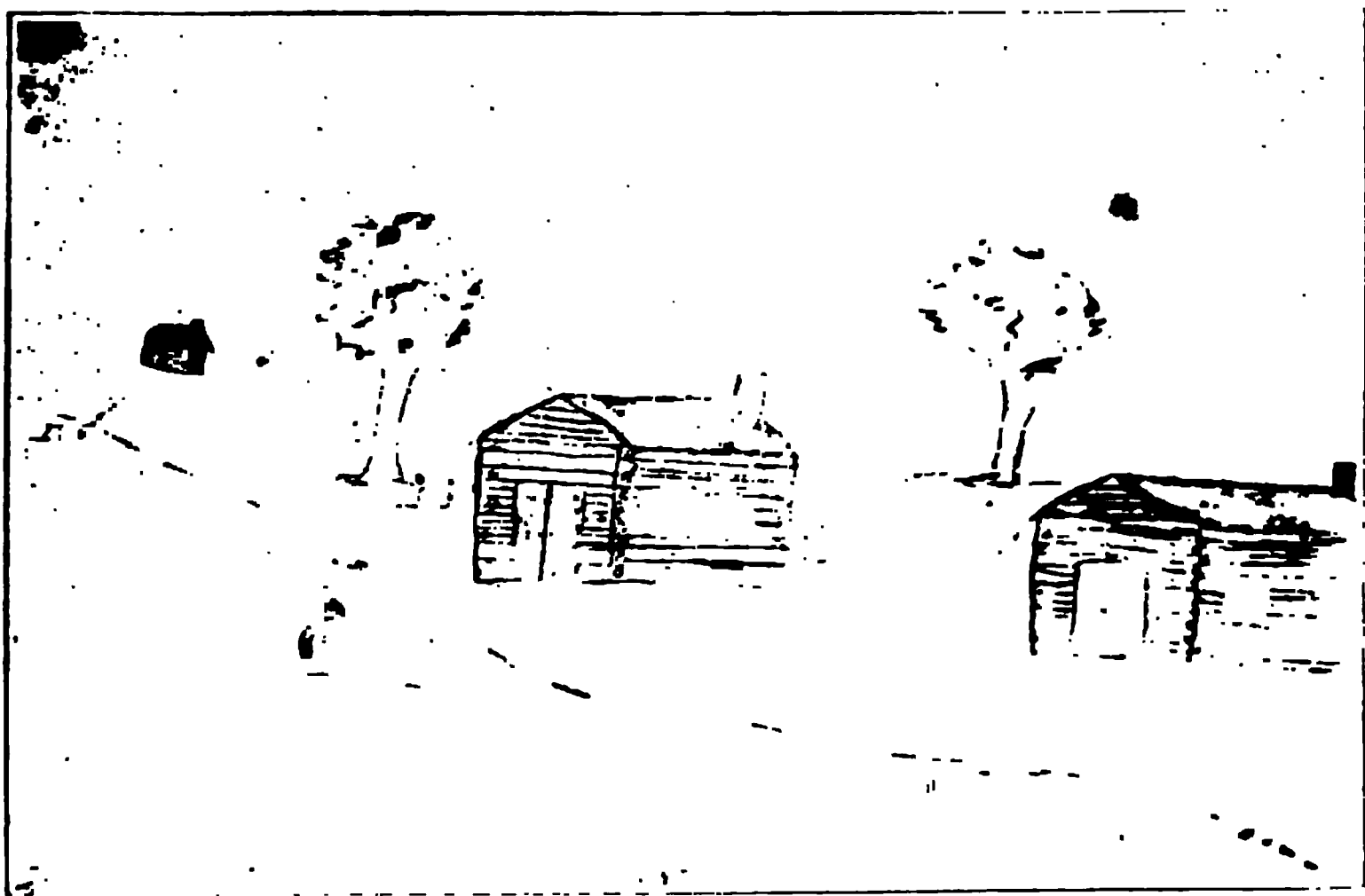


D. The illustrated material does suggest a certain type of work given in civics in the village and city problems (Point D of outline). Rich material on this phase of the work is available at the Chicago Historical Society, where relics of early Chicago and a pioneer cabin furnished with all a household's possessions give great vividness to our study.

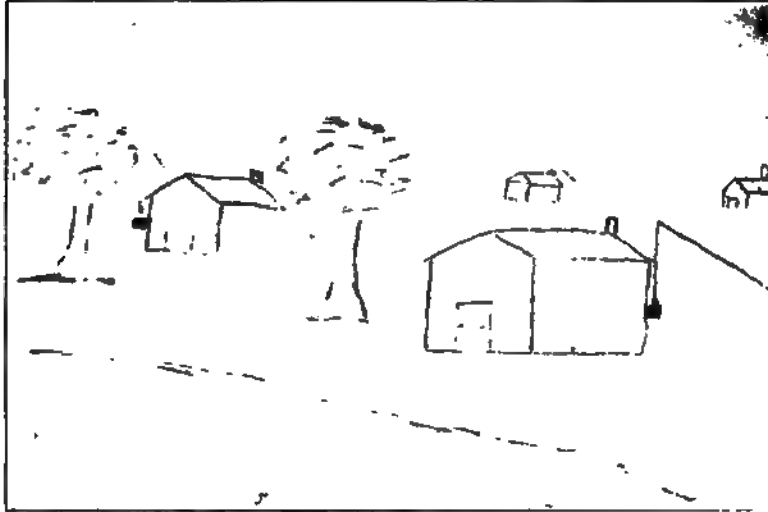
WATER SUPPLY

HOW THEY OBTAINED WATER IN EARLY CHICAGO

In early Chicago the people did not have a water faucet to turn on, but they had good water to drink. They would go down to the river, which had many little piers extending out into it. They would get down on their hands and knees and dip water up into wooden pails. The water was very pure, sparkling, clean and clear. The banks were very pretty. There were flowers and grass on them, and they sloped down to the water's edge. The small piers were built out because in shallow places there was earth or sand at the bottom. If they touched the bottom, the pail would roil the water. If they used the piers the water would be clean, clear, and cool. After a few more settlers had come to Chicago, people became careless and threw all sorts of garbage and dead animals which they wanted to get rid of into the river. The water soon became very impure, and sickness came, so they had to find some other way to get water.

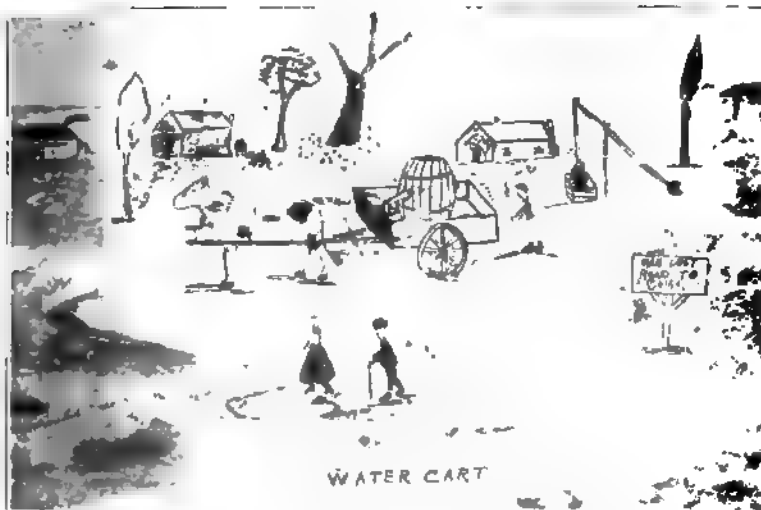
R. K.**WELL WATER**

When the river water became impure, people dug wells. The people used the wells for some time, but in the spring when more people came to Chicago and Chicago got more and more crowded, people began to get careless again. Pretty soon the wells became poisoned, and this is how it happened. The people threw garbage on the ground near the wells. Some of the people were too lazy to make a trough for



their pigs, and threw what the pigs were to eat right on the ground. So in the spring the rain water soaked the dish water and some of the garbage and other impurities into the wells. The swamp water overflowed into them, too. Chicago was then a runny looking town, with its well sweeps twice as high as the log cabins.

61



THE WATER CART

After the river water became impure, the people had wells; after the wells were not a success, people were at a loss to know what to do. A man soon had a clever idea. He got a cart and a horse and put a large barrel called a hogshead in the cart. He went to the south shore of Lake Michigan and dipped up clean water and put it into his hogshead. He then went around the town, calling at the top of his voice, "Water!" "Water!" Many people got water, and those who did had a hogshead at the back of their cabin. The water man attached his hose to their hogshead and filled it. The people that could not afford to buy the water either drew it from the poisoned wells or drank the river water. And so this kept up for a long time.

J. T.

LOG PIPE SYSTEM

Some of the people were too poor to buy water from the water man. More and more people came to Chicago. Soon a company of men got together. They said, "We can supply water for the people. At the same time we can make money for ourselves." So they made a pier on the south side of the river. It reached out 700 feet from the shore. Then a log pipe ran along the pier. One end was bent down into the water. They also had little log pipes which ran underground to the log cabins. People were filled with joy when they saw the fresh clean water come out of the faucets. This was a success for some time, but soon the company of men were disappointed. Little fish and little pieces of wood came through the faucets. This greatly dissatisfied the people of Chicago. Many people were too poor to pay for this water, so some still bought from the man with the cart, and the poorest people used the wells and the river.

D. K.

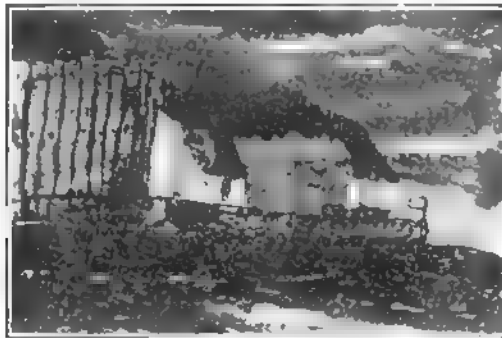
FIRST CITY WATER WORKS

After the log pipe system had failed, people wanted good drinking water, so the city built the water works on Chicago Avenue, north of the river. The reason for building the water works was that the poor people could not afford to buy the water. If the city built the water works, it would not cost so much, so they put engineers to work. It took three years to build it. They planned to dig a trench at the bottom of the lake and to drive piles all around the trench and fill it up with stones. An iron pipe was laid at the bottom of the trench instead of wooden pipes, and the end of the pipe bent up instead of down. Around the bent-up end they drove piles and filled them in with stones. When the storms came this kept the water in a quiet basin. Over the bent-up end was a strainer to keep out all impurities.

M. R. H.

SECOND CITY WATER WORKS

The first city water works had been successful for many years, but more and more people came, so the old-fashioned pumps could not supply them at all. A man by the name of Mr. Chesborough thought of a new plan. He was a city engineer. "We can get clean, clear water two miles out in Lake Michigan." The people laughed and said, "How can you get water from two miles out?" He said, "We will build a house out there." The people said, "You can't build a house without a foundation." So Mr. Chesborough built a house on shore. It had five sides. It was called a pentagon. It wasn't quite as big as the Palmer House when it was completed. They caulked it and launched it, as they do



MOVING THE FOUNDATION INTO LAKE



a boat. They had tugs tow the house out to where Mr. Chesborough planned to have it. They they opened the doors and let it sink. The house was built so high that part of it stuck out of the water. They put stones all around it, to make a firm foundation. Then they built a house on top. Through the center was a cylinder. The men went down this cylinder and began to dig. When they got a certain distance, they turned towards shore. At the same time the people on shore were digging, and when they got down a certain distance, they turned out toward the crib. Sometimes they met a big boulder; sometimes they could hear the paddle wheels of boats above their heads. Sometimes they met with gas, and then they would light it and run. One day the papers said they had only a little ways to go and that by to-morrow they would meet. Now, what would they do, meet or pass each other? It was great luck that they met each other within the space of an inch. There was much rejoicing and merry making. Then Chicago had fresh, clear, clean water at last.

R. G.

PUMPING RIVER WATER BACKWARDS

Mr. Cheseborough's plan was a great success for some time, but even two miles out in the lake impurities of the river affected the people's drinking water. People said, we must do something to turn the river backwards. They put pumps in at Bridgeport and tried to pump the river backwards. It wasn't a success at all, because the river would go backwards and forwards. Then they even tried to dig the Illinois and Michigan Canal deeper, to try to make the Chicago River flow westward. But that was not a success. New cribs were built three and four miles out in the lake. But the sewerage in the river still sent impurities out.

J. T.

THE DRAINAGE CANAL

When the pumps at Bridgeport failed to pump the river water backwards, people said, "We must dig a drainage canal that will do the work." They began the Canal in 1892, and it was finished in 1900. Sometimes they dug through soil, and sometimes through rock and soil. And again they had to blast through solid rock. The canal was 28 miles long, and from 160 to 290 feet wide, and 35 feet deep. They wanted the canal to be a drainage and ship canal. The whole canal was below the level of the lake, and it sloped so that the top of the canal was six feet higher than the bottom, so that the river would surely flow in that direction. When the canal was finished, they let the water in. It took thirteen days to fill the canal. They were afraid the water would overflow some of the towns along the river, so they built a dam with large gates in it at Lockport, so they could regulate the flow of the water. The river is still used as a sewer. People were complaining about the river water, because it was so black and foul-smelling, but after the lake water began to flow in, it changed from a black to a green color and there was no odor to the water.

Mary DeT.

INTERCEPTING SEWERS

After the drainage canal was finished, the sewers on the South Side still flowed into the lake. There was a crib at Hyde Park, and the sewerage from the South Side of Chicago affected the people's drinking water. So the city said, "We must build an intercepting sewer, and let all this sewerage from the South Side empty into that." This connected with the Chicago River and the drainage canal. A great many streets were torn up for a long time, but now all the impurities are taken away from Lake Michigan.

C. B.

NORTH SHORE DRAINAGE CANAL

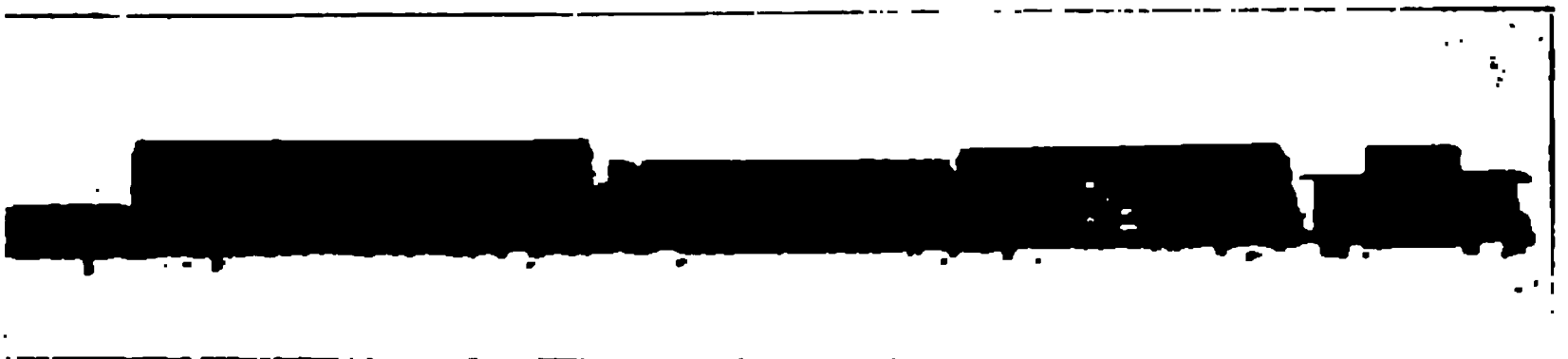
After the drainage canal was finished, the lake water was still impure. Then the people said that the sewers at Evanston and other towns on the north shore of the lake empty into Lake Michigan, and the south current of the lake carries those impurities down to our cribs, so people said we should build another Drainage Canal. Engineers got to work. They dug a canal which connected Lake Michigan with the North Branch of the Chicago River. When it was finished, all the sewerage of the towns north flowed into that canal instead of into Lake Michigan, so this took all impurities away from the lake and from our cribs.

H. B.

The following morning exercise on transportation indicates the method by which one group objectified in hand work its study of transportation and of the importance of Chicago as a great railroad center. (Point E-6 of outline.)

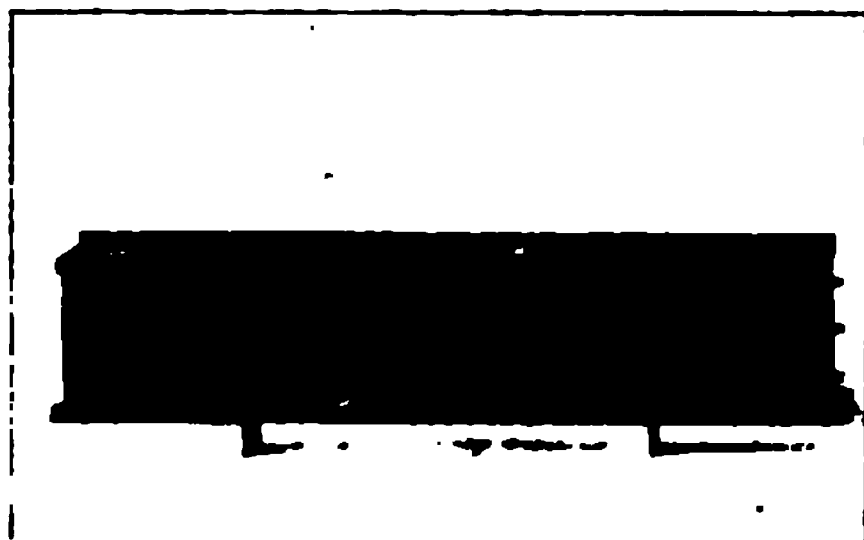
TRANSPORTATION

Last year the third grade studied about early Chicago, and the different ways of traveling in the early days. We decided to make a train of cars in the woodshop.



We chose the cars because they are made just outside of the city, and because Chicago is such a very large railroad center, and because going by train is the most rapid way of traveling.

The reason that we did not make a passenger train is because the passenger cars are too hard to make.



We also made plans for the truck, the wheels and the track. We thought it would be nice to give the cars to the kindergarten children.

J. P.

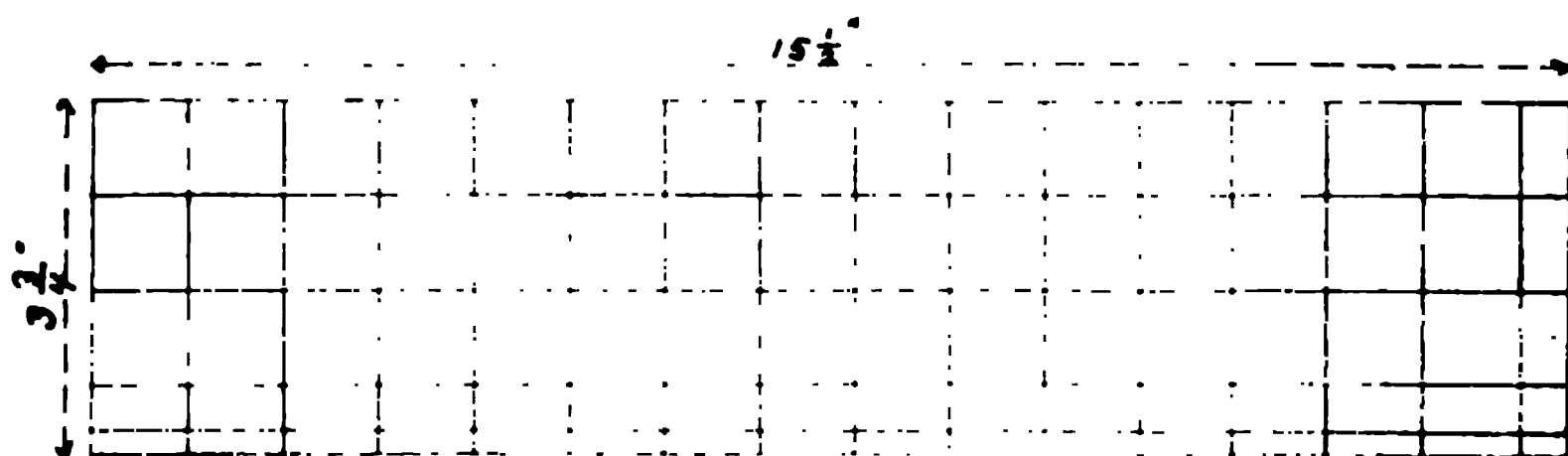
Two children worked on a car. If each child made one car, there would be too many cars, and we would not get them finished. One worked on the sides and floor; the other one made the ends, the top, and the running board. We put two coats of paint on them. One child put on one coat of paint, and the other put on the other coat. We grooved the sides and ends with a carving tool to make them look like boards running up and down. We used large staple tacks for the steps. We named each car and planned the lettering. We called the cars the "F. W. P. Fast Freight."

M. Z.

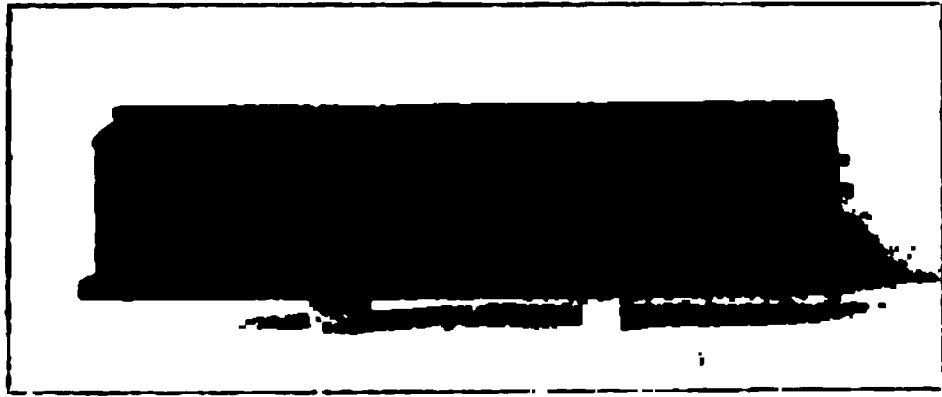
We wanted to know the capacity of our cars. We used inside measurements. The box car is $18\frac{1}{2}$ inches long, 4 inches wide, and 3 inches high. I made a drawing of the floor of the car. We used 1 inch cubes to see how many cubic inches there were in one layer. We found 74 cubic inches. In three layers there were 222 cubic inches.

I made a drawing of the floor of the coal car, too. In the first layer there were $58\frac{1}{8}$ cubic inches. In two layers there were $116\frac{1}{4}$ cubic inches.

F. M.



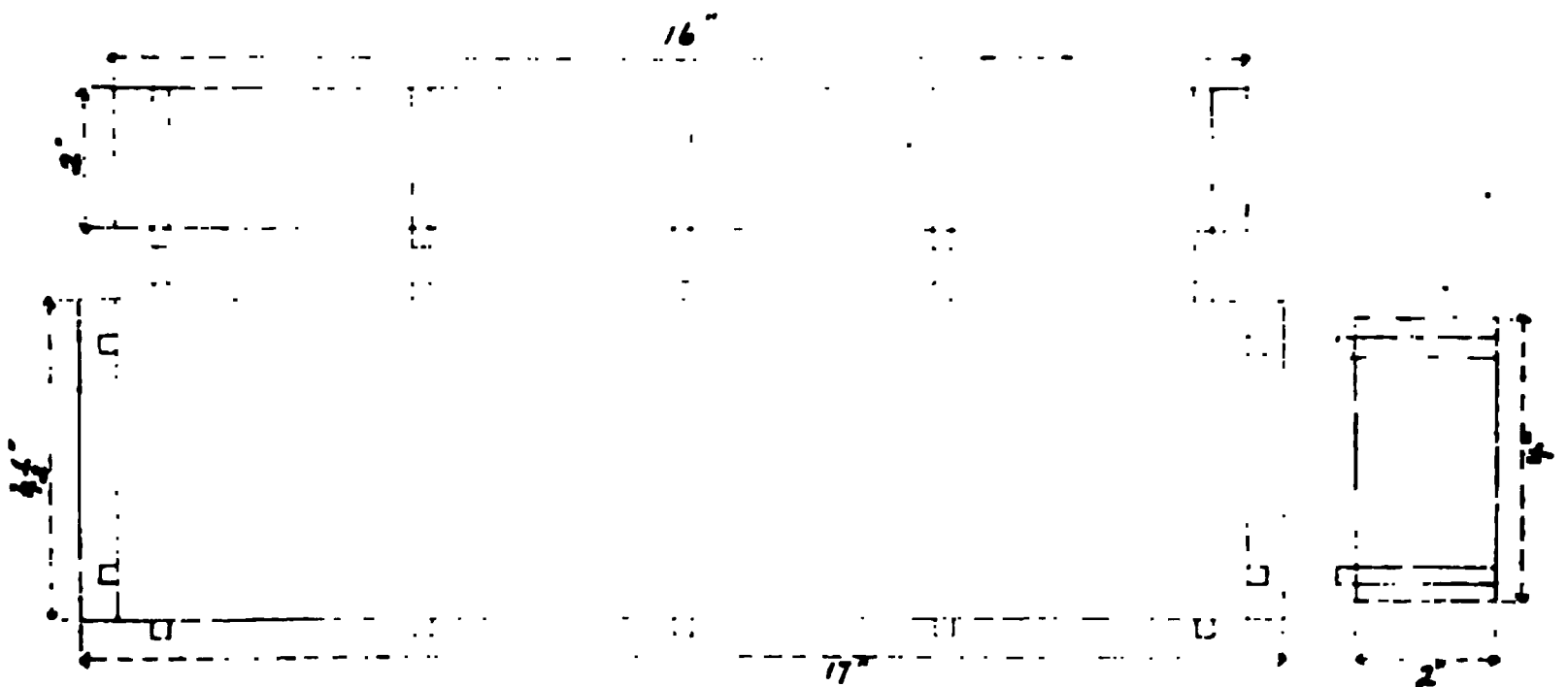
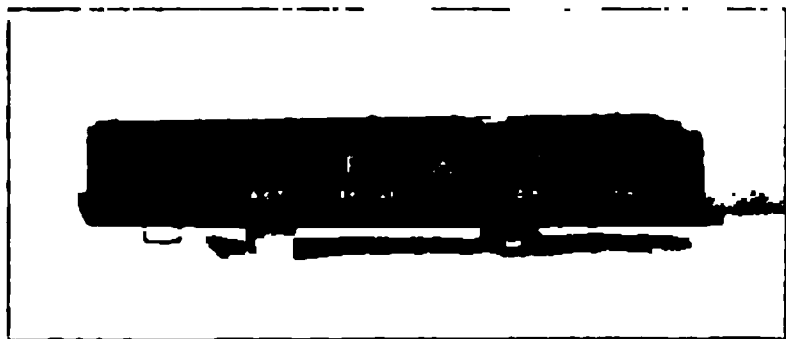
We did not go to the car shops to measure the cars, as we had all seen freight cars and we had a good book with pictures and measurements given.



Each child used the book and selected the car he liked the best. I chose the coal car. It was 34 feet long. We decided upon the scale to use in making the cars. We first thought we would make them on the scale of one inch to a foot, but 34 inches would be too long. Then we thought that $\frac{1}{2}$ inch to a foot would be better.

This is the plan of my car.

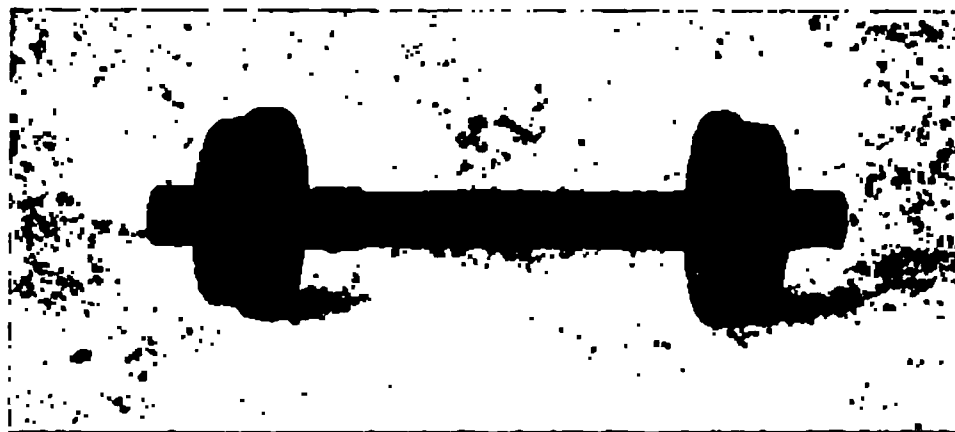
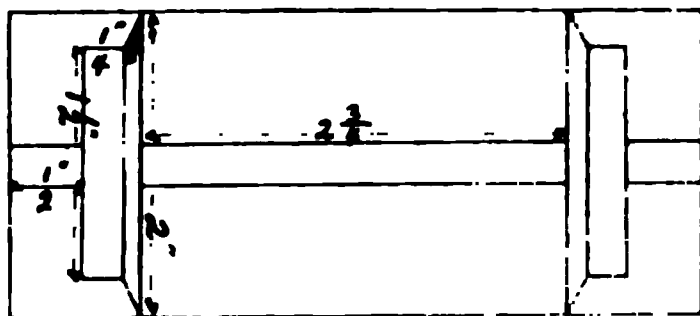
H. S.



When we made the wheels we used the same scale that we did in making the cars, only we made the flange bigger. The reason we did this is because the little cars are not heavy enough to stay on the track.

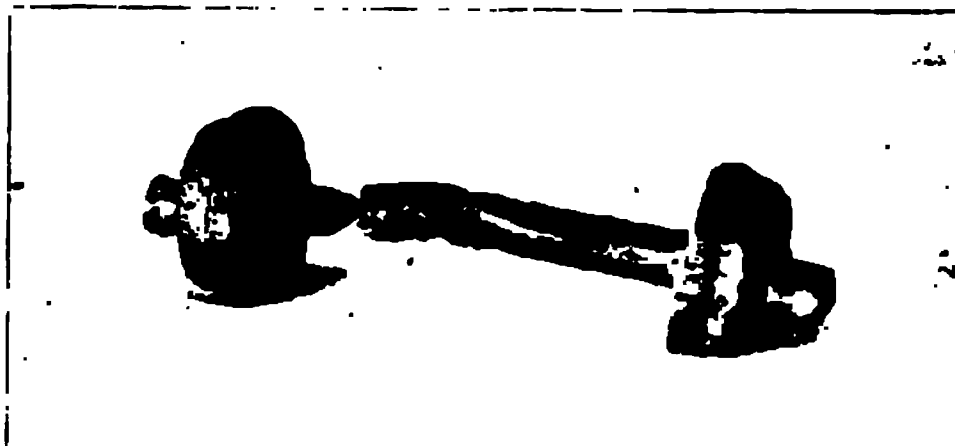
I made a model of the wheels on the lathe. Here is the plan of my wheels.

E. P.

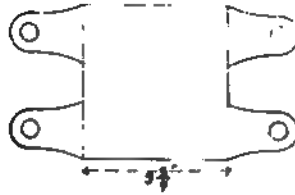


We wanted to have iron wheels for our cars, but we could not make them. We used Frank's wooden model for casting wheels in lead because we wanted to know how they cast large wheels. We took a flask and pounded molder-sand into it. A molder's flask is made of two frames and is held together by wooden pegs. These frames are to hold the sand in which the model is imbedded. We took one frame and pounded molder's sand into it and set the wooden wheels into that. Then we sprinkled dry sand on so the molder's sand in the one half would not stick to the other when the two were taken apart. We then took the two halves apart and took the wooden model out. We made air-holes in the flask on top with a hatpin, and a larger hole to pour the molten lead in. We put the flask together again and poured the lead in the hole. When cool we took the flask apart and this is the way the lead wheels looked. The reason there are these holes in them is because there were not enough air-holes in the flask and the melted lead couldn't push the air out.

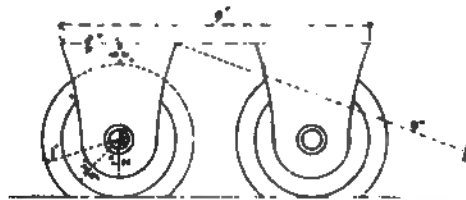
D. W.



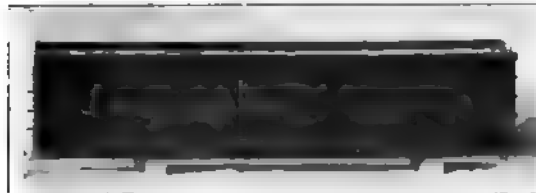
Everybody in the third grade last year made a drawing for the truck for our cars, and we at last decided on this one.



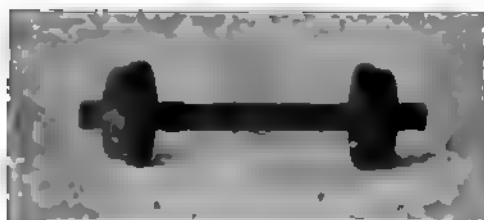
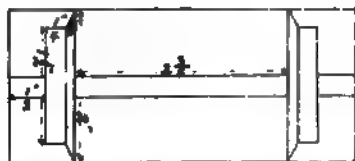
The truck is made of some metal. It fits on the bottom of the car and holds the wheels on to the car. We are going to screw our truck to the car so it can turn a little when going around the curves. The wheels are $\frac{3}{8}$ inch below the bottom of the car. We made them that way so the wheels would not hit the bottom of the car.



If we were to use these cars, we would send the stock car west to the cattle ranches to be filled with cattle and bring it back to the stock yards to unload. The refrigerator cars we would send to the stock yards, fill with fresh meat, and ship to the east where the people need it most. The coal car we could send right down in Illinois and fill with coal to help carry on the great manufacturing in the city. The furniture car we could



fill with furniture made here and ship west where people need it most. The box car we could take to Minnesota to fill with grain, or it might be used for any common freight. The caboose is used for the people who work on the train, and the men who look after the stock.



We wanted to have iron wheels for our cars, but we could not make them. We used Frank's wooden model for casting wheels in lead because we wanted to know how they cast large wheels. We took a flask and pounded molder-sand into it. A molder's flask is made of two frames and is held together by wooden pegs. These frames are to hold the sand in which the model is imbedded. We took one frame and pounded molder's sand into it and set the wooden wheels into that. Then we sprinkled dry sand on so the molder's sand in the one half would not stick to the other when the two were taken apart. We then took the two halves apart and took the wooden model out. We made air-holes in the flask on top with a hatpin, and a larger hole to pour the molten lead in. We put the flask together again and poured the lead in the hole. When cool we took the flask apart and this is the way the lead wheels looked. The reason there are these holes in them is because there were not enough air-holes in the flask and the melted lead couldn't push the air out.

D. W.



Everybody in the third grade last year made a drawing for the truck for our cars and we at last decided on this one

As this outline shows, history cannot be taught alone. All the other subjects are interwoven through it. History is not science, it is not art, it is not geography; it is all these in one. It is a record of life and activity, and for clear imaging in any one of the problems undertaken by the grade all these factors are necessary.

READING LIST

The following reading list is taken from *The Story of Chicago*, by Jennie Hall published by Rand McNally Company. The book is itself the basic material for the children to use, and we are grateful that after a few years' interval it is again in print.

Reading List prepared by Jennie Hall, p. 273, *Story of Chicago*.

FRENCH PERIOD

Jesuit Relations	Goldthwaite	Burrows
Narrative and Critical History of America	Justin Winsor	Houghton
Pioneers of France in the New World..	Francis Parkman	Little
The Jesuits of North America.....	Francis Parkman	Little
LaSalle and the Discovery of the Great West	Francis Parkman	Little
The Old Regime in Canada.....	Francis Parkman	Little
Count Frontenac and New France.....	Francis Parkman	Little
The Story of the Trapper.....	Agnes C. Laut	Appleton

EARLY ILLINOIS

Illinois, Historical and Statistical 2 vols..	John Moses	(Out of print)
History of Illinois.....	Henry Brown	(Out of print)
Wau-bun	Mrs. Kinzie	Rand McNally
Historic Illinois	Randall Parrish	McClurg

CHICAGO

History of Chicago.....	A. T. Andreas	Andreas
History of Chicago.....	Moses and Kirkland	Munsell
Discovery and Conquests of the North- west with the History of Chicago....	Rufus Blanchard	Blanchard
Chicago and the Great Conflagration....	Colbert and Cham- berlain	(Out of Print)
Reminiscences of Early Chicago.....	Edwin O. Gale	Revell
Industrial Chicago Vol. V.....	George W. Hotchkiss	Goodspeed
Story of Chicago.....	Joseph Kirkland	Dibble
Sketch of Life of Gordon Saltonstall Hubbard	H. E. Hamilton	(Out of print)

Chicago City Manual.....	S. A. Eastman	Chicago Bureau of Statistics
Plan of Chicago.....	Burnham and Bennett Ed. by Moore	Commercial Club
Guide to Chicago.....	Association of Commerce	

FOR CHILDREN'S READING

Autobiography of Black Hawk.....	(Out of print)	
Discovery of Old Northwest.....	James Baldwin	Am. Bk. Co.
Conquest of the Old Northwest.....	James Baldwin	Am. Bk. Co.
Heroes of the Middle West.....	Mary Hartwell Catherwood	Ginn
Pioneers of the Mississippi Valley.....	Chas. McMurry	Macmillan
Story of the Great Lakes.....	Channing and Lansing	Macmillan
The Story of Chicago and National De- velopment	Eleanor Atkinson	Little Chronicle
A Civic Manual for Chicago and Cook County	S. R. Winchell	Flanagan



FOURTH GRADE

THE STUDY OF GREEK LIFE

Because children of nine are not only susceptible to beauty but also fearless in expressing their emotions, we have chosen for our history work in the Fourth Grade the study of a beauty-loving and expressive people—the Greeks.

In the commonly accepted use of the word *history*, as meaning *political history*, we may not be said to teach this subject at all. Our aim is not to teach all that is known about Greece and the Greeks but to re-create to some extent the life of the Greeks. We wish the children to think as the Greeks thought, to feel as the Greeks felt, and to live as the Greeks lived. It may seem absurd to expect boys and girls in the year 1923, in the city of Chicago, to experience the emotions of an Athenian living during the time of the Persian War; but, after all, are not the issues of the Persian war far more comprehensible to a young child than those of the war through which we have just passed? In so far as the Greek civilization is simpler than ours, is it not more intelligible to a child?

It is not nearness in time which makes an epoch actual to a child, but his capacity to experience it. It is not only the simplicity of the Greek civilization, but also its freshness which appeals to a child's understanding. For in their vitality the Greeks have preserved their life in statues, bas relief, painting, and most beautifully in *The Iliad* and *The Odyssey*.

Judging by the children's love of the work and by their growth of power in appreciation and expression, the study of the Greeks seems admirably suited to children of this age. How shall the child, grimy with soft coal and surrounded by skyscrapers, picture those sunny hills, that blue sea? We read about Greece, we look at pictures of Greece, those who have been to Greece testify, and somehow a picture of Greece comes into the children's minds. They wish to preserve that picture, to draw it, and to write about it. This is one child's description:

"Greece is a peninsula. The sea is on three sides of it. There are many mountains and pretty little valleys. Through the valleys run little

streams. Beside the river are green olive groves and wheat fields and beautiful gardens. There are sheep on the mountain's side. There are many vineyards. There are many little islands in the sea."

By constant incidental reference, the children learn the principal points of the ancient geography of the Mediterranean Sea and gain a general knowledge of the political geography of the modern world.

The children realize that they will wish to keep a book in which they tell and picture all the most interesting things about the Greeks, so they plan the covers for it. On the covers they print in no uncertain letters *My Greek Book*, and they decorate it with a Greek border, or the picture of a Greek ship, or of a warrior.

It is obvious that if one lived in such a beautiful country one would wonder about the things which surrounded one. So we tell the stories which the Greeks created to explain how the earth was made, why the sea is sometimes rough and sometimes smooth, how spiders came to be, and about the creation of the first grasshopper, and the many, many other stories which it would be tedious to enumerate, but which it is thrilling to hear. While these stories are being told them, the children read *Men of Old Greece*, from which they learn about the lives of Greeks who have actually lived.

The children take great pleasure in reading aloud, and the desire to read these stories and those in *Four Old Greeks* to the class furnishes a strong motive and stimulus to improve their reading, for they know that they must not read to others until they can give pleasure by so doing.

In reading *Men of Old Greece*, they first learn about the life of the Spartan children from the story of Leonidas. The hard life of the Spartans, with every emphasis on training for war, forms an interesting contrast to their own lives. They try to imagine what it would be like if their fathers were soldiers and the boys were going to be soldiers, and the girls did not go to school with the boys, and they are not at all sure that they entirely approve of Spartan ways. They are, however, sure that Leonidas was a very brave man, whom they admire very much. One child says:

"Thermopylae was a narrow pass; on one side were mountains and on the other the sea. Leonidas and his three hundred Spartans, with a few thousand Greeks, met the large army of the Persians. Leonidas felt that they could not win, but he said that if they did not win their brothers

would fight the Persians. They held the pass two days and the Persians could not down them; but at last a scout came to Leonidas and said, 'A Greek traitor has told the Persians about a secret pass and they are coming up behind the Greeks.' The Greek army was not half so big as the Persian, but they fought and made the Persians fly. But more Persians came and at last the Greeks could not drive them away and they were beaten. Leonidas fought until he was killed."

In the stories about Themistocles and Socrates they learn about the Athenians. Here they are able to give unqualified approval, and in fact, when reading of the Persian Wars they cease from judging, and with the Athenians become, in turn, alarmed at the approach of the Persians, excited over uniting Greece to meet them, and proud at having defeated them.

The Athenians were against the Persians. They had been fighting for quite a long time. The Persians had many more men and many more ships and the Greeks did not have half so many. Then one day Themistocles said to the Athenians, 'Are you going to waste your money this way, or are you going to give it to us to build ships with?' Then they all shouted and said, 'We will give it to you to build ships with.' So Athens was a busy little town. There were mules and carts bringing the lumber to build ships.

Nancy.

Another child wrote about the battle of Salamis:

"Now it was time for the battle to begin. Soon the trumpet blew and the ships dashed together. The Persian ships were so crowded that they broke their own oars. The water was filled with men and ruins of boats. The Persians that could get away got away as quickly as they could. So King Xerxes went sadly home."

In *The Four Old Greeks* the children make the acquaintance of the mythical characters, Herakles, Dionysos, Alkestis, though it must be confessed that they are as real to them as Themistocles or Phidias, and so were they to the Greeks. The merry Dionysos, the brave Herakles, the gentle Alkestis are all fine folk with whom it is well to be acquainted.

From the *Odyssey* more than from any other source a child is able to picture the Greek life, thought, and emotion. It is an invaluable experience for him to read a poem which is so beautiful and so perfect. As he reads and loves the *Odyssey* he is acquiring a "touch stone for literature," he is gaining a resource for his leisure hours, a life long joy. He understands the *Odyssey* because Homer's spirit is akin to his, because for both of them the world is whole and new.

Here we have the ideal hero-tale for the children of this grade. The theme, the wanderings of Odysseus in his attempt to reach home after the ten years' Trojan war, is simple and well within the sympathetic experience of children from nine to ten years of age. The hero, the ever-ready, royal Odysseus, loyal to his friends, brave and daring; Odysseus, the crafty, the wise, is a hero after the children's own hearts. Each adventure makes a well unified story, and the home-coming, where all ends well, satisfies the children's sense of right and justice. The glow and life of Homeric language, the vivid and colorful images become a source of conscious delight each day as the story unfolds.

To associate for months with heedful Penelope, white-armed Nausicaä, with noble King Alcinous, with the kind and gentle swineherd Eumeaus, is indeed to be in good company. To see King Laertes plant his own fruit trees, Queen Arete spin and weave the lustrous cloth for the members of her family, to follow Nausicaä while she and her maidens wash their linen on the sunny beach, is to learn to place the right value on all manual work. And, lastly, to be in an atmosphere of beauty, emanating from the very chairs, golden cups, baskets of fruit, from high-roofed palaces and well built swine sties, is to become truly filled with a pure and lasting joy.

Palmer's translation of the *Odyssey* may be a difficult book for the Fourth Grade, but when one considers what is lost by using adaptations in form, style, language, and general craftsmanship, one feels that the stories adapted lack that art value for which the literature has been chosen.

The study periods are never considered lessons in reading. The children who read fluently and beautifully read aloud; the teacher reads and sometimes tells parts of the story. Incidents not suitable for our children are omitted. The children are encouraged to express their feelings about the events, the persons, the language, about anything to which they respond. Palmer's *Odyssey* is, fortunately, not illustrated. The children are, therefore, free to make their own pictures and usually produce an original *Odyssey Picture Book*.

Naturally the children compare their own daily experiences with those of the Greeks. They read of the training of Leonidas of Sparta and note the difference between his and their own training. They learn of Socrates' first school days. Do they

wish themselves in his place? They look at the houses of the Greeks, and their own comfortable sanitary homes please them by comparison.

The girls are on the whole glad that they were not born when women and girls were confined to the home, could not appear in public, at the theatre, or in the market place.

Throughout the *Odyssey* the children notice the Greek feeling about the sea. Such phrases as "the fearful hollows of the barren sea," "the interminable, terrible sea," "the toilsome ocean ridges," convince them that the Greeks dreaded the sea. We learn that this is due to the Greeks' lack of knowledge of the sea, to their small, unsafe, open ships, to their ignorance of methods of steering. The sun and stars were their only guides.

It is pleasant to contemplate how differently we feel about the sea. It has been charted; the compass guides the trained sailors over the oceans. There are experienced pilots to steer the ship through dangers near the shore. Here are friendly lighthouses, buoys, signals of all kinds to help the man at the wheel to find his way to safe anchorage.

We choose to study in detail how Chicago has safeguarded the ships that enter her harbor. A visit is made to the Masonic Temple for a bird's eye view of the river, the inner and outer harbor, the lighthouses, life saving stations, and piers. A comparison is made between natural and made harbors; an excursion to the life saving station and the lighthouse opens up the whole interesting subject which then may be studied from books and pictures. The joy and love of the modern man for the sea is emphasized by such poems as *The Sea*, *The Sea* by Procter and *A Wet Sheet and a Flowing Sea* by Allan Cunningham.

If the children only read about the Greeks they would form no vivid conception; but besides reading they see pictures of Greek men and women, Greek furniture and decorations, Greek ships and chariots. They study and apply Greek designs. They see models of houses and temples, and visit the Art Institute to see the statues there, besides having smaller statues about them in the grade room. After they have studied these things they model statues to show how they think the Greeks looked. When they model they feel that they are doing the very thing the Greeks did. They enjoy this activity particularly because they identify themselves with the Greeks as they do it.



MODELING GREEK FIGURES IN CLAY

Their work in clay is not confined to modeling, but also includes a study of pottery. They visit a modern pottery, see the potter at his wheel, learn about modern methods of producing pottery and of firing and glazing. They make vases out of red clay, similar to that which the Greeks used and paint designs in black on the terra cotta vases just as the Greeks did.

From their reading the children have a rich body of material to illustrate. They write the stories to put in their Greek book and paint pictures to illustrate them. These pictures are very free, with little emphasis on technique, for with young children a strong desire for expression brings its own technique. Incidentally while they are modeling and painting they study the human figure and try to make it in its proportions.

Another experience which makes the child feel that he is doing just what the Greeks did, is the making of the costume. Each child, boy and girl alike, makes his own chiton, while some even make chlanyses to throw over their chitons. They not only make but dye their costumes and study Greek designs to put on them. The costumes are also worn in whatever Greek plays the children give, since the children dramatize and

act those stories which are fitted for such treatment. They weave head bands and from these experiences as a point of departure they make original designs to apply to table runners and bags and experiment with further weaving.



PUPILS MAKING THEIR GREEK COSTUMES

One of the reasons for making the Greek costumes is that the children will wear them to dance in on Field Day. They have read about Greek games and dances, so Dalcroze Eurhythmics have here a logical and necessary place. The study of rhythm continues in exercises of free and controlled movement, marching or running according to the tempo and tone quality of the music, on command executing a leap, a step backward, a lunge, a skip, etc.

Unusual rhythms of 5 8, 7 8 and 9 8 are studied in ball games, discus throwing, spear throwing, as well as polyrhythmic studies like "The Horses," in which horses and drivers march in different note values, the horses always twice as fast as the drivers, except when they step triplets to the drivers' eighths.

Those activities, such as modeling, painting, sewing, dancing and acting, which make the child or feel as if they were Greeks, have been considered.



FIGURE 10. CHILDREN

Aside from the value of these activities to vivify Greek life they are intrinsically of value because they help a child to become articulate. Surely it is obvious that the greater and more varied a person's powers of expression, the greater is his opportunity for happiness. It may be, as Mr. Robinson suggests, that the absence of a dead language accounts for the greatness of the Greeks, since it gave them time to think. But it was their skill in expressing their thoughts which made them enjoy their leisure to the utmost; and we hope that by following in the foot-steps of the Greeks the children may develop similar powers.

This play which the group composed after the study of the *Odyssey* shows that they had made not only the experience of Odysseus but also some of Homer's telling language their own.

FOURTH GRADE GREEK PLAY

Act. I. Council of the Gods.

Act. II. Circe.

Act. III. The Phaeacians.

Act. IV. At Home.

Act I. Council of the Gods

Place—Mt. Olympus.

Persons—Zeus, Athena, Hera, Apollo, Hermes, Poseidon.

ZEUS: (*to Athena*)—Child, what is your wish, fear not, speak out!

ATHENA—O, Father Zeus, I plead for one who ever sacrifices to you and to all the other blessed gods. I speak of princely Odysseus, the bravest of the Archaeans. For ten years he fought on the plains of Troy. By his craftiness at last was the wide wayed city of Ilios laid in ruins. Now all the other chiefs have reached their homes; he only, royal Odysseus, son of Laertes, is kept wandering, longing for his wife and native land. Now, O, Father Zeus, will you not let him reach his own high roofed hall?

POSEIDON—I have a right to do what I please with him, when he is in my realm. Did he not blind my son, Polyphemus, and sorely mock him? Yet, if it be his lot to see his friends once more, and reach his stately home and native land, late let him come, in evil plight, with loss of all his crew, on the vessel of a stranger, and may he at his home find trouble.

ATHENA—Have you not avenged yourself enough, cruel one? Remember well what god-like Odysseus has suffered. All his ships and men are lost. Dreadful Scylla and fierce Charybdis he has passed, storms and shipwreck he has met with an undaunted heart.

ZEUS—Well I remember the sacrifices of Odysseus. Upon the seas, you, Poseidon, will have your way,—but Odysseus shall reach his high-roofed house. It is my will. (*Nods, and it thunders.*) (*To Hermes*) Hermes, go straightway to the Island of Ogygia, where the fair haired Calypso dwells. Bid her to set Odysseus free. I command.

Act II. Circe

Place—In front of Circe's palace—doors closed.

Persons—Eurylochus and six men, Circe, Odysseus, Hermes.

EUR.—Why did we obey Odysseus? What palace is this?

FIRST MAN—Perhaps it is the home of someone, evil like Polyphemus, or the kind of the Laestrygonians. Have we not suffered enough and lost many of our dear comrades? Odysseus brings us ever into dire trouble. (*Singing is heard from within.*)

SECOND MAN—Ah, friends, somebody within the house is tending a great loom, and singing sweetly. It is a god or woman. Then let us quickly call. (*Men calling.*) Open the shining doors and let us in. (*The doors open and Circe appears. All the men go in but Eurylochus who runs away.*)

CIRCE—Welcome, strangers, sit and rest, and now refresh yourselves with food and drink. (*Men fall upon the food and drink eagerly.*) You are like swine, too eager for food. (*Touching each one with a wand, he turns into a swine.*) Off to the sties with you. (*She throws corn and acorns for them.*) (*Doors close.*)

EUR.—Where are my comrades? Here I have waited, not one has returned.

ODYSSEUS—Why do you weep, Eurylochus, and where are our comrades?

EUR.—We went as you commanded, noble Odysseus, through the thicket, and found within the glades a beautiful house. Here somebody was tending a great loom and loudly singing, some god or woman. The others lifted up their voices and called; and suddenly coming forth, she opened the shining doors and bade them in. The rest all followed heedless, but I remained, suspicious of a snare. They vanished, one and all, not one appeared again, though long I sat and watched.

ODYSSEUS—Then I shall enter the house to find my comrades. Come, Eurylochus, help me free them.

EUR.—Oh, heaven descended man, bring me not there against my will, but let me go to the ship; for well I know you never will return, nor will you bring another of your comrades.

ODYSSEUS—Eurylochus, go to the black hollow ship, but I will go on in for strong necessity is laid on me. (*Eurylochus leaves. Just as Odysseus starts to call Hermes enters.*)

HERMES—Where are you going hapless man? Your comrades, there at the house of Circe, are penned like swine, and kept in sties. You come to free them. Nay, I am sure you will return no more, but there like the rest you too will stay. Still, I can keep you free from harm. Here, take this potent herb and go to Circe's house. This shall protect your life against the evil day. And I will tell you all the magic arts of Circe. She will prepare for you a potion and cast drugs into your food, but even so she cannot charm you, because the potent herb which I shall give you will not permit it. And let me tell you more; when Circe turns against you her long wand, then draw the sharp sword from your thigh and spring upon Circe as if you meant to slay her. (*Hermes picks the herb and gives it to Odysseus. Hermes leaves.*)

ODYSSEUS—Open the wide doors. Let me in! (*Circe opens doors.*)

CIRCE—Come, stranger, come in and I will give you food and drink. You are weary, sit here and rest. (*Odysseus sits down. Circe mixes the drugs in wine; Odysseus drinks. Circe smites him with her wand.*) Off, to the sty and lie there with your fellows. (*Odysseus draws a sword and springs on Circe.*) Who are you? Of what people? Where is your town and kindred? I marvel much that drinking of these drugs, you were not charmed. None, no man else, who tasted them, ever withstood these drugs. Surely you are adventurous Odysseus. Then, put up your blade within its sheath and let us trust each other.

ODYSSEUS—Circe, why ask me to be gentle toward you when you have turned my comrades into swine within your halls, and here detain me with treacherous purpose?

CIRCE—By Zeus and all the other blessed gods, I swear I will not further try to harm you. (*To her maids.*) Go, bring water for Odysseus' hands, and spread the polished table. Bring food and mix the sparkling wine that he may eat and drink and be refreshed. (*Odysseus sits, refusing food.*) Why do you sit, Odysseus, thus like one struck dumb, gnawing your heart, and touch no food nor drink? Do you suspect some further guile? You have no cause for fear, for even now I swore to you a solemn oath.

ODYSSEUS—Ah, Circe, what upright man could bring himself to taste of food and drink before he had released his friends and seen them with his eyes? But if you in sincerity will bid me eat and drink, then set them free, that I with my own eyes may see my trusty comrades.

CIRCE—I shall do as you wish and free your comrades. (*Leaves. Enter Circe with the men. Men clasp Odysseus' knees, kiss his hands, and weep.*) High-born son of Laertes, ready Odysseus, go now to your swift ship and to the shore, and first of all draw up your ships upon the land, and store within the caves your goods and all your gear, and then come back yourself and bring your trusty comrades and stay with me.

Act III. Phaeacia

Scene I

Place—On the river's bank.

Persons—Nausicaä, her maids, Odysseus.

(*Maidens playing ball. Ball falls into the water. Maidens scream. Odysseus awakens and comes forth. Maidens see him and flee, except Nausicaä.*)

ODYSSEUS—Are you some god or mortal? If one of the gods who hold the open sky, to Artemis, daughter of mighty Zeus, in beauty, height and bearing I find you likest. But if you are a mortal living on the earth, most happy are your father and your honored mother, most happy your brothers also. Once, something like you I saw, a young palm shoot springing up. On that I marveled long, since never before sprang such a stalk from earth. So, Lady, I admire and marvel now at you and greatly fear to touch your knees. Yesterday, after twenty days I escaped from the wine-dark sea. Now some god cast me here, that probably here also I may meet with trouble. Princess, have compassion. Show me the town and give me a rag to throw around me if you have perhaps on coming here some wrapper for your linen. And may the gods grant all that in your thoughts you long for.

NAUSICAA—Stranger, now you have reached our city and our land, you shall not lack for clothes nor anything beside which it is fit a hard-pressed suppliant should have. I am the daughter of generous Alcinous on whom the might and power of the Phaeacians rest. My women, stay! Why do you run because you saw a man? You surely do not think him evil-minded. But this poor man has come here, having lost his way, and we should give him aid. Then, give, my women, to the stranger food and drink and bathe him in the river,—there is shelter from the breeze. (*Maidens call to one another. Take Odysseus to a place of shelter,*

CIRCE—Welcome, strangers, sit and rest, and now refresh yourselves with food and drink. (*Men fall upon the food and drink eagerly.*) You are like swine, too eager for food. (*Touching each one with a wand, he turns into a swine.*) Off to the sties with you. (*She throws corn and acorns for them.*) (*Doors close.*)

EUR.—Where are my comrades? Here I have waited, not one has returned.

ODYSSEUS—Why do you weep, Eurylochus, and where are our comrades?

EUR.—We went as you commanded, noble Odysseus, through the thicket, and found within the glades a beautiful house. Here somebody was tending a great loom and loudly singing, some god or woman. The others lifted up their voices and called; and suddenly coming forth, she opened the shining doors and bade them in. The rest all followed heedless, but I remained, suspicious of a snare. They vanished, one and all, not one appeared again, though long I sat and watched.

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ODYSSEUS—Eurylochus, go to the black hollow ship, but I will go on in for strong necessity is laid on me. (*Eurylochus leaves. Just as Odysseus starts to call Hermes enters.*)

HERMES—Where are you going hapless man? Your comrades, there at the house of Circe, are penned like swine, and kept in sties. You come to free them. Nay, I am sure you will return no more, but there like the rest you too will stay. Still, I can keep you free from harm. Here, take this potent herb and go to Circe's house. This shall protect your life against the evil day. And I will tell you all the magic arts of Circe. She will prepare for you a potion and cast drugs into your food, but even so she cannot charm you, because the potent herb which I shall give you will not permit it. And let me tell you more; when Circe turns against you her long wand, then draw the sharp sword from your thigh and spring upon Circe as if you meant to slay her. (*Hermes picks the herb and gives it to Odysseus. Hermes leaves.*)

ODYSSEUS—Open the wide doors. Let me in! (*Circe opens doors.*)

CIRCE—Come, stranger, come in and I will give you food and drink. You are weary, sit here and rest. (*Odysseus sits down. Circe mixes the drugs in wine; Odysseus drinks. Circe smites him with her wand.*) Off, to the sty and lie there with your fellows. (*Odysseus draws a sword and springs on Circe.*) Who are you? Of what people? Where is your town and kindred? I marvel much that drinking of these drugs, you were not charmed. None, no man else, who tasted them, ever withstood these drugs. Surely you are adventurous Odysseus. Then, put up your blade within its sheath and let us trust each other.

ODYSSEUS—Circe, why ask me to be gentle toward you when you have turned my comrades into swine within your halls, and here detain me with treacherous purpose?

DYSSEUS—Alas! To what man's land am I come now? Where are the Phaeacian captains? They promise they would carry me to far seen Ithaca, but that they did not do. Let me count my goods and see that the Phaeacians took none away upon their hollow ship. (*Athena appears disguised as a shepherd.*) Friend, tell me truly this that I may know full well. What land is this? What people? What sort of men dwell here? Is it a far seen island or a tongue of mainland that stretches out to sea?

ATHENA—You are simple, Stranger, or come from far away to ask about this land. It is not quite so nameless. Stranger, the name of Ithaca has gone as far as Troy, which is, they say, a long way from Achaea.

DYSSEUS—Oh, in lowland Crete, I heard of Ithaca, far off beyond the sea, and now I reach it. I and these goods of mine. There I slew Orislochus, son of Idomeneus. After I had slain him with my brazen pointed spear I straightway sought a ship, asked aid of the proud Phaeacians and bade them take me in their ship to Pylos. But stress of wind turned them aside. Missing our course, here we arrived last night. Then, weary as I was, sweet sleep came upon me, and the Phaeacians, taking my treasure from the hollow ship, laid it upon the sand where I was lying, and they embarked and sailed away to stately Sidon. So I was left behind with aching heart. (*Athena smiles and pats him.*)

ATHENA—Prudent and wily must one be, to overreach you in craft of any kind. And yet you did not know me, Palas Athena, daughter of Zeus, me, who am ever near to guard you in all toil. Now I am come to tell you what griefs you must endure, and I shall give you strength to slay the haughty suitors within your stately house. Come, then, and let me point out the parts of Ithaca, that so you may believe. Here is the darksome cave, sacred to the nymphs, where oftentimes you made due sacrifice. This is the wood-clad hill of Neriton. (*Odysseus kisses the earth.*)

DYSSEUS—Oh nymphs, daughters of Zeus, I give you greeting, gifts will I also give. (*Pours libation.*)

Scene II

PLACE—In the palace.

PERSONS—Penelope, Odysseus, the suitors, Telemachus, Eumaeus.

(*Suitors feasting.*)

FIRST SUITOR—This is gay life indeed, eating and drinking from the rich store of royal Odysseus.

SECOND SUITOR—Yes, but one wearies even of feasting. Why does not fair Penelope choose one among us?

THIRD SUITOR—Here we tarry year after year. Penelope ever putting us off with crafty plans.

FOURTH SUITOR—Oh, foolish woman, Odysseus has long been lost either on the cruel sea or on some strange shore. (*Odysseus, disguised as a beggar, and Eumaeus have entered during this conversation. Odysseus seated by the door, the suitors see the beggar.*)

FIFTH SUITOR—Look at the wretched beggar. Surely he will tell Penelope idle tales of her husband, thereby getting himself clothing and food.

place robe and tunic for him, give him a golden flask and liquid oil and bid him bathe.) (To Odysseus.) Now, Stranger, hasten to the town that I may set you on the road to my wise father's house. Easily it is known, a child though young could show the way. There wise Alcinous and my mother will welcome you.

Place—In the field.

Scene II

Persons --Odysseus, Alcinous, bard, athletes.

(Bard telling of the fight over the body of Achilles. Odysseus weeps.)

ALCINOUS--Harken, Phaeacian captains and councillors! Now, have we satisfied desire for the impartial feast and for the lyre which is the fellow of the stately feast. Let us then come away and try all kinds of games, so that the stranger, going home, may tell his friends how greatly we surpass all other men in boxing, wrestling, leaping and speed of foot. *(Games and races.)*

ODYSSEUS—Games you should know, there is no greater glory for a man in all his life than that which he wins with his own feet and hands. I am amazed to see.

ALCINOUS— And now, Stranger, tell me the name by which at home your father and your mother called you, and declare me this and plainly tell me where you have wandered and what countries you have seen. And tell me why you weep and grieve within your breast on hearing the story of the Argive Danaëns and of Ilios? Had you some relatives at Ilios? One who was dear?

ODYSSEUS--Mighty Alcinous, first I will tell my name, that you and all your men may know it and that I may be your guest—friend, and that you may help me to reach my home, though far away. I am Odysseus, son of Laertes. My home is Ithaca, a rugged land and yet a kindly nurse. A sweeter place than my own land I shall not see. Nothing more sweet than home and parents can there be, however rich one's dwelling, far in a foreign land, cut off from parents.

ALCINOUS— Proud are we to have as guest, you, princely Odysseus. And you shall be aided home with no more wanderings, long as you have suffered. Tomorrow you shall tell us the tale of your many adventures. Harken, Chieftains, let each man here give gifts, garments with rich-wrought gold, caldron, and large tripod. Then we will launch into the sacred sea a black ship, freshly fitted, and let two and fifty youths be chosen who have proved to be the best.

ODYSSEUS --Mighty Alcinous, renowned of all, pour a libation and send me safely forth. Fare you all well, may you be glad, you and your wives and children.

Act IV. At Home

Scene I

Place--On the shore of Ithaca.

Persons --Odysseus, Athena, Nymphs.

(Odysseus asleep, nymphs dance. Odysseus awakens, nymphs run away.)

BIBLIOGRAPHY

Next Books used by children and teacher:

Odyssey	Palmer	Houghton
Old Greece.....	Jennie Hall	Little
Old Greeks.....	Jennie Hall	Rand McNally
Cities	Jennie Hall	Macmillan
Ancestors in Europe.....	Jennie Hall	Silver

Books selected from list given by Jennie Hall in her Manual
of Ancestors in Europe p. 56, "Books to be used by the
teacher":

Herodotus's Odyssey.....	W. C. Perry	Macmillan
Heroes	Kingsley	De Medici Pub.
Stories from Greek Life and Story...	Church	Putnam
History and Song.....	Church	Macmillan
Stories of the Persian War from Herodotus	Church	Caldwell
Good Tales	Hawthorne	Penn
Book	Hawthorne	Houghton

Books to be used by the teacher:

History of the Orient, Greece and Rome..	Botsford	Macmillan
Times	Breasted	Ginn
History of the Ancient Greeks.....	Gulick	Appleton
Life in old Athens.....	W. S. Davis	Allyn and Bacon
History in Ancient History.....	W. S. Davis	Allyn and Bacon
Book in Greek History.....	Fling	Heath
Hymns	Lang	Langman
Classical Histories		Everyman's
Plays of Greek Lives		Everyman's
Plays of Euripides.....		Everyman's
Dramas of Aeschylus.....		Everyman's

Selections from list by Emily J. Rice in her Outline for
History:

History of the Greeks.....	Guerber	Am. Bk.
Golden Bough.....	Frazer	Macmillan
Fable.....	Bulfinch	Dutton
Greek Sculptors.....	Gardner	Scribner
History of Greek Art.....	Gardner	Macmillan
History of Greek Sculpture.....	Gardner	Scribner
History of the Art of Phidias.....	Waldstein	Putnam
Classical Drama.....	Moulton	Oxford
History of Greek Sculpture.....	Murray	Scribner
History of Ancient Sculpture.....	Lucy Mitchell	Dodd
History of Greece.....	Diehl	Semicke
History of Greece.....	Grote	Dutton
History of Greece.....	Curtius	Scribner

SIXTH SUITOR—Not one of these lazy beggars but has seen Odysseus and can tell the day of his return.

FIRST SUITOR—(*Throwing a bone at Odysseus*)—Here, take this and gnaw it. (*Suitors laugh.*)

TELEMACHUS—Artious, why do you insult this wanderer in my hall? Zeus, the friend of strangers, will punish you.

PENELOPE—Hearken, you haughty suitors who beset this house. I offer you the mighty bow of Prince Odysseus and whoever with his hands shall bend the bow, him will I follow and forsake this home, a place I ever shall remember even in my dreams. (*To Eumaeus*) Deliver to the suitors the bow of your master. (*Eumaeus takes down the bow.*)

ANTILOCHUS—Rise up in order from left to right.

SECOND SUITOR—(*Tries to bend the bow*)—No, friends, I cannot bend it. Let some other take the bow.

EURYMACHUS—Ah, here is woe for me and woe for all. If in strength we fall so short of Princely Odysseus that we cannot bend his bow, oh, the disgrace for future times to know.

ODYSSEUS—Hearken, you suitors of the illustrious queen, and let me tell what the heart within me bids. Give me now the polished bow and let me in your presence prove my skill and power and see if I have yet such vigor left as once there was within my supple limbs, or whether wanderings and neglect have ruined all.

ANTILOCHUS—You wretched stranger, are you not satisfied to eat and drink with us? I prophesy great harm to you, if you should bend the bow. Do not presume to vie with younger men.

PENELOPE—Antilochus, do you suppose the stranger, if he bends the great bow of Odysseus will lead me home and take me for his wife? He in his inmost soul imagines no such thing.

EURYLOCHUS—Heedful Penelope, we do not think the man will marry you. Of course that could not be, and yet we fear the talk of men and women. 'Princes of the Achaeans came to woo Penelope and could not bend the polished bow, but a wandering beggar comes and bends it.'

PENELOPE—Eurymachus, the stranger will try to bend the bow for our pleasure only, and if Apollo grants his prayer I will clothe him in a coat and tunic and I will send him where his heart and soul may bid him go.

TELEMACHUS (*To Eumaeus*)—Carry on the bow, Good Eumaeus, and give it to the stranger. (*Eumaeus gives bow to Odysseus. Odysseus turns the bow in his hand, observes it closely, tries the cord, bends the bow. Suitors look frightened. Sound of thunder is heard. Lets fly one shaft which kills Antilochus.*)

ODYSSEUS—Telemachus, the guest within your hall brings you no shame. I did not miss my mark, my strength is sound as ever. (*Lets fall his rags.*)

SUITORS—Odysseus! It is Odysseus. (*Suitors flee. Odysseus, Telemachus and Eumaeus pursue them.*)

PENELOPE (*alone*)—It is Odysseus. (*Odysseus and Telemachus return. Athena appears. Penelope runs to meet Odysseus.*)

PENELOPE—You have come at last! Surely the blessed gods who hold the open sky have been your guides.

FIFTH GRADE

EXPLORATION AND DISCOVERY

Exploration and discovery, the theme of the fifth grade history, centers about that exploration of the middle ages which was prompted so largely by the need for a new route to the East. The heart of the work, apart from the historic link, is the human significance of exploration and discovery. The tenacity of purpose, the high courage, the thrill of adventure, and the romance of discovery which mark it are worth-while emotions to get, even at second hand, and the reality of it all is immensely keen to the adventure-loving child of ten. He has no geographic conviction so firm that there is not still some suspense as to whether daGama could find a way around Africa, or Magellan a way through South America. To him, moreover, at the beginning of the year the Ptolemy map is about as satisfactory as the latest National Geographic publication; and as this new world-knowledge dawns more and more clearly it parallels somewhat the medieval dawning of geographic knowledge.

One of the things which adds charm and value to this work is the available first hand material which can be given to the children, and in reading excerpts from Marco Polo's own book, bits from the journals of the explorers themselves and Toscanelli's letter to Columbus, the inevitable stimulation of such original material is felt, and a right attitude toward authentic sources is being developed.

The work divides itself rather distinctly into three phases, and as about a third of the year is given to each, the work is so outlined here.

Where to begin is a matter which has varied in teaching different groups, and depends largely upon where one chooses to put emphasis. To begin with the Viking exploration and discovery opens the work with the charm of adventure and the tang of the sea. It presents, too, a primitive condition which illustrates well how discovery develops among a people. The chain of islands which tempted Norsemen further and further to sea, the accidental contribution of storms to discovery, are so evident here that they are

significant to children in realizing the beginnings of exploration. Chronologically, too, this is a satisfactory starting point. Moreover, somewhere along the literary highway children need the old Norse myths and legends, which are delightfully adapted to this hardy, adventure-loving stage of childhood. Should the work begin here, this period would fill about one-third of the year.

In *Viking Tales* by Jennie Hall, how Harold became king over all Norway and the causes of emigration from Norway are splendidly told; the stories of Leif and Ingolf, Eric the Red, and Leif Ericsson continue the steps of exploration and the settlement of Iceland, Greenland, and Labrador. Miss Hall also gives an excellent bibliography and suggestions to teachers. The pamphlet, *Norse Stories*,* gives ample reading lists for the myths and legends.

The thrill of this period is very tempting, but for those of us who feel that whatever else be our pedagogic responsibility our first obligation is to educate children to a right evaluation of peace, to cease to vaunt the false glories of war and the lust of battle, the very thrills give us pause. Are we here, too, building upon false stimulation which has remained too long unquestioned? Is it wise to emphasize more modern exploration with its more advanced social and scientific basis? Perhaps this is a decision which should control our emphasis rather than our starting point.

The work will then either begin or continue with a survey of the Mediterranean countries, familiar through the children's fourth grade interest in Greece and her colonies. We picture with much detail Venice as the center of eastern trade and Constantinople as the end of the caravan route. The journey of Marco Polo is followed, to awaken in the children some of the enthusiasm which his writings roused in the Europeans of his own day. There is, fortunately, considerable first hand material accessible in Noah Brooks' *Story of Marco Polo*. Following this are given the obstacles in Western Asia which made a new trade route necessary. These phases establish the setting which is needed to make the later discoveries and their work meaningful.

If the Norse work is omitted, about a third of the year is given to this material. If used, it seems wise to condense this and include it with the medieval explorations which follow as the second third.

* Pittsburgh Public Library Children's Department, price ten cents.

the year's work. This movement westward in Europe is the very art of the work and must not be curtailed so as to lose the detail and atmosphere which are essential to vivid imagery.

The significance of the stupendous adventure of Magellan is built up through realizing the problems and difficulties encountered in earlier discoveries. The dream of Columbus, Balboa's discovery of the South Sea, Cortez's effort to cross Mexico, and Pizarro's explorations on the Isthmus and along the western South American coast to Peru, prepare for Magellan's thrilling climax of circumnavigation.

Below are given the steps taken in this second third of the year's work.

. Portugal.

Geographic position.

The superstitions which hindered exploration by Portugal as well as by other nations.

Prince Henry the Navigator.

Portuguese discovery along the western coast of Africa.
daGama and his work.

. Spain.

Columbus's dream Spain's impotence because of her recent wars with the Mohammedans.

Later Spanish exploration under

Ponce de Leon

Balboa

Cortez

Pizarro

Magellan

De Soto.

. England—its exploration prompted by rivalry of Spain.

John and Sebastian Cabot.

Drake's explorations:

Captured Treasures.

Conquest of the Armada.

England in the time of Drake as a picture of the medieval times; in this period there are many points familiar to children, which have hung isolated and here find coherence.

Hudson and his futile efforts for England.

- 4. France in the new world- -
Newfoundland and the
St. Lawrence region.
Champlain, Cartier, LaSalle, Joliet and Marquette.

For the last part of the year, effort is made to throw over against this survey of medieval exploration with its superstition, self aggrandisement, and greed, the picture of modern exploration emphasizing the spirit of exploration which marked the work of Livingston and Stanley in Africa, Peary and Nansen in the Arctic and Scott and Amundson in the Antaretic. This phase rounds out the fifth grade child's still vague geographic concept into a more complete world knowledge, but what is far more important, it substitutes for the glory of war and the conviction that might is right those humanitarian and scientific ends and methods which color modern exploration.

All this period, both medieval and modern, is rich in splendid literature to construct and intensify the realization of typical periods, men, and incidents. Besides the material in the way of diaries, letters and records which have been made easily accessible through reference collected by Jennie Hall and listed in her *Teacher's Manual for Our Ancestors in Europe* there exists the following bibliography:

BIBLIOGRAPHY

Our Ancestors in Europe.....	Jennie Hall	Silver
A Book of Discovery.....	M. B. Syngé	Putnam
(Tells the whole story of exploration from Herodotus to Amundsen in 1912. Splendid old maps and pictures)		
Story of Mankind.....	W. H. VanLoon	Boni & Liveright
History with a Match.....	W. H. VanLoon	McKay
European Background of American History	E. P. Cheyney	Harper
Romance of Discovery.....	W. E. Griffis	Wilde
Discovery of America.....	John Fiske	Houghton
Spain in America.	E. G. Bourne	Harper
Heroes of Discovery in America.....	Morris	Lippincott
English Seamen of the Sixteenth Century	Troude	Scribner
Days of Discovery.....	B. Smith	Dutton
Days of the Discoverers.....	Louise Lamprey	Stokes
In the Days of the Guilds.....	Louise Lamprey	Stokes
Famous Voyagers and Explorers.....	S. K. Bolton	Crowell
American Hero Stories.....	Tappan	Houghton

- Folks Book of American**
orers T. W. Higginson Longmans
of Heroism Wm. H. Mace Rand
World and Its Discovery H. B. Wetherell Oxford
of Geographical Discovery Joseph Jacobs Appleton
of Discovery told by the
overers E. E. Hale Little
s Discoverers and Explorers of
rica Chas. H. L. John-
son Page Co.
Book of Exploration Jenks Doubleday
ook of the Long Trail Newbolt Longmans
of Marco Polo Noah Brooks Century
- (Charming book with many quotations from Marco Polo's own writings)
- Henry the Navigator** C. R. Beazley Putnam
(Especially chapters 12--14, 17, 18)
- l of Columbus** Hakluyt Society Publications
of Columbus E. E. Seelye Appleton
of Pizarro G. M. Towle Lothrop
zuma and the Conquest of
o E. E. Seelye Appleton
ie Andes H. Butterworth Wilde
f Magellan H. Butterworth Appleton
irst Voyage around the World
lagellan Stanley Hakluyt Society
an G. M. Towle Lothrop
Drake Julian Corbett Macmillan
of the Armada Froude Scribner
of Boyhoods E. M. Fryer Dutton
ers and Founders of America A. E. Foote Am. B. Co.
ard Ho Charles Kingsley Scribner
alter Raleigh John Buchan Holt
- 'Eleven episodes in Raleigh's life supposed to be told by men who knew Raleigh. Gives atmosphere of the time and sharp characterization of the great men of his day.' (S. Hall.)
- Days of Queen Elizabeth** Tappan Lothrop
Skylark John Bennett Century
s of France in America Parkman Little
of Chicago—Part I Jennie Hall Rand
Marquette R. G. Thwaites Appleton
aSalle the Explorer Virginia Watson Holt
of Tonty Mrs. Catherwood McClurg
of the Middle West Mrs. Catherwood Ginn
f Knowledge—Book I Grolier Society

AFRICA

Heroes of Modern Africa.....	Gilliat	Lippincott
Last Journal of David Livingston in Central Africa		Harper
Story of Livingston.....	V. Golding	Dutton
Child's Livingston	M. Entwistle	Oxford
More than Conquerors.....	A. Gilbert	Century
In Darkest Africa.....	H. M. Stanley	Scribner
Through the Dark Continent.....	H. M. Stanley	Harper
Explorations and Adventures of Henry M. Stanley in the Wilds of Africa....	H. M. Stanley	National

ARCTIC AND ANTARCTIC

Story of the Polar Conquest.....	M. Marshall	Winston
Heroes of the Farthest North and Farthest South	C. K. Maclean	Crowell
Northward Over the Great Ice.....	Robert Peary	Stokes
Farthest North.....	Nansen	Harper
My Life with the Eskimos.....	Stefánsson	Macmillan
South	E. H. Shackleton	Macmillan
Like English Gentlemen.....	Robert F. Scott	Doran
Voyage of Discovery.....	Robert F. Scott	Scribner
Scott's Last Expedition....arranged by F. Huxley		Dodd
Voyage of Capt. Scott.....retold by C. Turley		Dodd
(With an introduction by Sir J. M. Barrie)		
Antarctic Adventure, Scott's Northern Party	R. F. Priestly	Dutton
With Scott	G. Taylor	Dodd
Heroes of To-day (Article on Scott)...	Mary R. Parkman	Century
South Pole	Amundsen	Lothrop

The geographic setting is so great in extent that the danger of superficiality is ever present, but on the other hand the history motivates vivid imaging of many geographic regions and of typical landscapes that establish a splendid basic world-conception on which to build later. The outline below will illustrate the point.

Just to follow intelligently the location of the historic points, the following geography is essential:

1. The Mediterranean
2. The Route of Marco Polo
 - The Desert of Gobi
 - China

3. In considerable detail: Italy
Spain
Portugal
4. Africa—its western coast and the Cape of Good Hope
5. The Spice Islands
6. The Philippines
7. The West Indies
8. Central America
9. South America
10. The Panama Canal

In the beginning of the work the Mediterranean—its location, bordering countries, and typical scenes—are worked over.

Europe in its general extent—its countries and great natural divisions—is studied because, except for France, Germany, and England, all of which are rather vague, Europe to the average fifth grader is a name which covers a multitude of unknown lands.

Only such study of Asia is made as follows the route of Marco Polo across Asia and is done only from the scenic standpoint, using description and pictures as we travel. Each child has a mimeographed copy of the description of the Desert of Gobi adapted from *Messer Marco Polo* by Byrne.* The Chinese wall, the location of Siberia, and the territory of the Mongols is worked over from fine material available in recent copies of the *National Geographic Magazine*.

Venice is studied in minute detail to give vivid pictures, and here the description of Venice, also adapted from *Messer Marco Polo*,* is given the children. Italy is then studied as to topography, cities and rivers, with their relative locations.

Spain and Portugal are taken up in enough detail for the children to realize their general topography, sea ports, and rivers.

The meaning of the work of Henry the Navigator demands a knowledge of the west coast of Africa, the Cape of Good Hope, and the relation of Africa to Europe and the Orient.

The Spice Islands are significant as the quest of all the early Eastern traders, and the Philippines as the first stopping place and the scene of the death of Magellan.

*Material adapted by Miss Mary Fox from p. 74-100 and 18-42, "Messer Marco Polo." This material is in printed form and may be had from the Francis W. Parker School Publication Department.

After Columbus' landing in Cuba the regions of the Gulf of Mexico, the West Indies, Mexico, Central America, Peru, and the Straits of Magellan, are the scenes of Spanish exploration, and as such pictured in considerable detail.

The Panama Canal, the needed link during all of this period of exploration, becomes a very real issue at this time, and its conception, construction, and present economic and political significance are intensely interesting.

Because the west, east, and south parts of South America have a bearing on the history, and because geographically the children need the experience of working out one continent to learn how to read maps, to gather and organize material, and to cull a scenic unit from such material, we take South America to study in detail. This year the class began with a study of the physical maps. The mountains, plateaus, and lowlands were seen in the larger masses; the river systems were traced and discussed. This physical map study was translated into word pictures, and these in turn were corrected by actual pictures, slides, and stereoscopic views. The political divisions were noted and listed. In class, one country was worked out as vividly as possible with the help and suggestion of the teacher, who furnished also all references and illustrative material. Then the children were divided into committees. Each committee studied and reported upon a country while the rest of the class, watching the map, took notes, questioned the committee, and formulated some sort of a report on what they got from the work of the committee. The children went to the Field Museum and to the Lincoln Park Conservatory to sketch typical South American products and vegetation.

At the end of the study of South America each child wrote questions for the rest of the class, upon the country in which he had been especially interested, and questions upon the continent as a whole. He chose such questions as he felt would illuminate the study. These were edited, each question being typed on a card, and they have furnished material for a "Geography Game" which has pleasantly reviewed and crystallized our study.

Trips to the Field Museum, to the Lincoln Park Conservatory, to the Dunes, and to a tamarack swamp have helped to build up pictures of some typical geographic areas. Sketches were made by



quills upon the battlements, and the view of the city from the scope view of the city, showing the city and the city and trees.

BOOK LIST USED IN GEOGRAPHY

Each child owned a copy of the Frye and Atwood Geography, Book II. In this textbook the children used freely:

World Geography	Tarr & McMurry
Advanced Geography	McMurry & Parkins
North America	Carpenter
South America	Carpenter
Europe	Carpenter
Africa	Carpenter
Continents and Their People.....	Allen
Book of Knowledge	
World Book	
National Geographic Magazine:	

Constantinople	May, 1915.
The Dardanelles	
and the Bosphorus.....	May, 1915.
Persia	April, 1921.
Russia	November, 1914.
Italy	October, 1916.
Venice	June, 1915.
Lisbon	November, 1922.
Asia Minor	November, 1922.
Mexico	July, 1916.
	May, 1914.
	June, 1916.
Panama	July, 1912.
	June, 1914.
	February, 1912.
	February, 1914.
South America	October, 1921.
	August, 1916.
Peru	April, 1913.
	June, 1920
Where our bananas	
come from	July, 1912.
Sugar	July, 1920.

Each child made a book of the history, and these books they used as Christmas gifts to their parents. By Christmas time only Chapter I was completed, so the children added a note to the effect that other chapters would be brought home and inserted in the loose-leaf covers as fast as they were complete. A dedication was written by each child, and this was printed with an illuminated initial letter. The whole was put into covers made by the children, with printed title and name, and was decorated by a unit of design significant of the contents of the book.

A very great deal of written experience and direct English teaching resulted from this book making, as well as splendidly motivated sketches with art periods devoted to their improvement. The following index and sample papers will illustrate this work.

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(Note: The *w* indicates written by child and *d* drawn by child himself)

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Outline Map of the World, Goode Series, Published by University of Chicago Press.

CHAPTER I

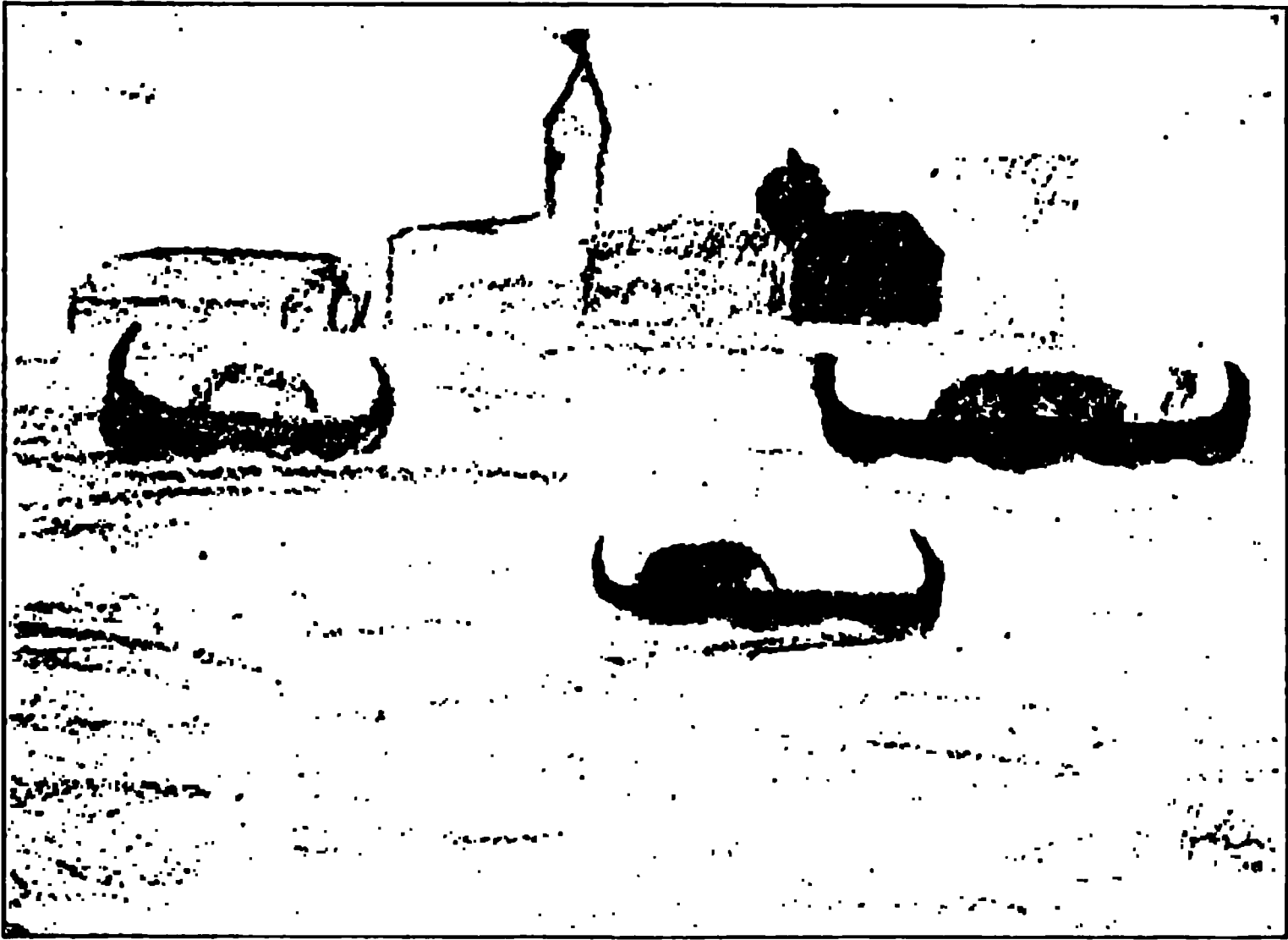
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Description of part of the Journey of Marco Polo, from "Messer Marco Polo," by Byrne.....

The City of Venice, a description; taken from "Messer Marco Polo," by Byrne



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Grand Canal	
Ducal Palace	
St. Mark's	
Lion of St. Mark's	

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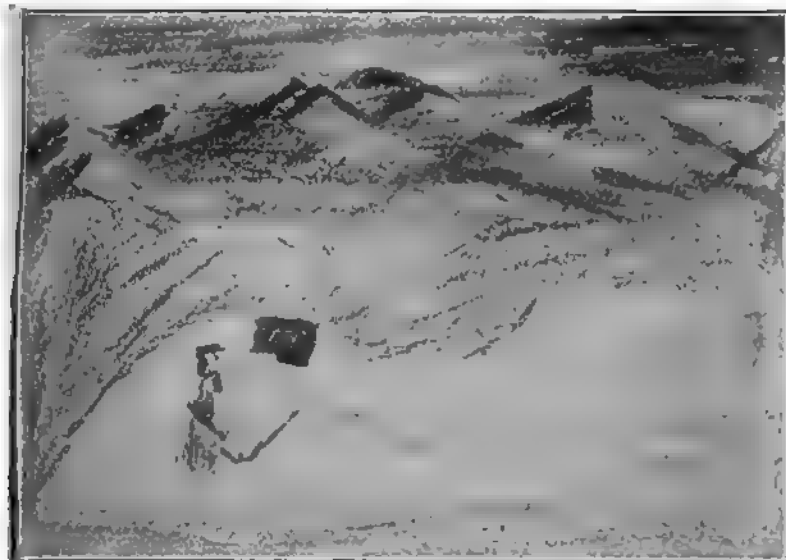
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The paper on the letter written by Toscanelli to Columbus by Toscanelli, the famous astronomer, is a reproduction of a letter from Columbus to the aged scholar asking him to write regarding a shorter route to India. These were prepared by Miss Mary D. Johnson, the aged daughter of the author, a most valuable first hand material.



BALBOA CLAIMS SOUTH SEAS FOR SPAIN

CHAPTER IV

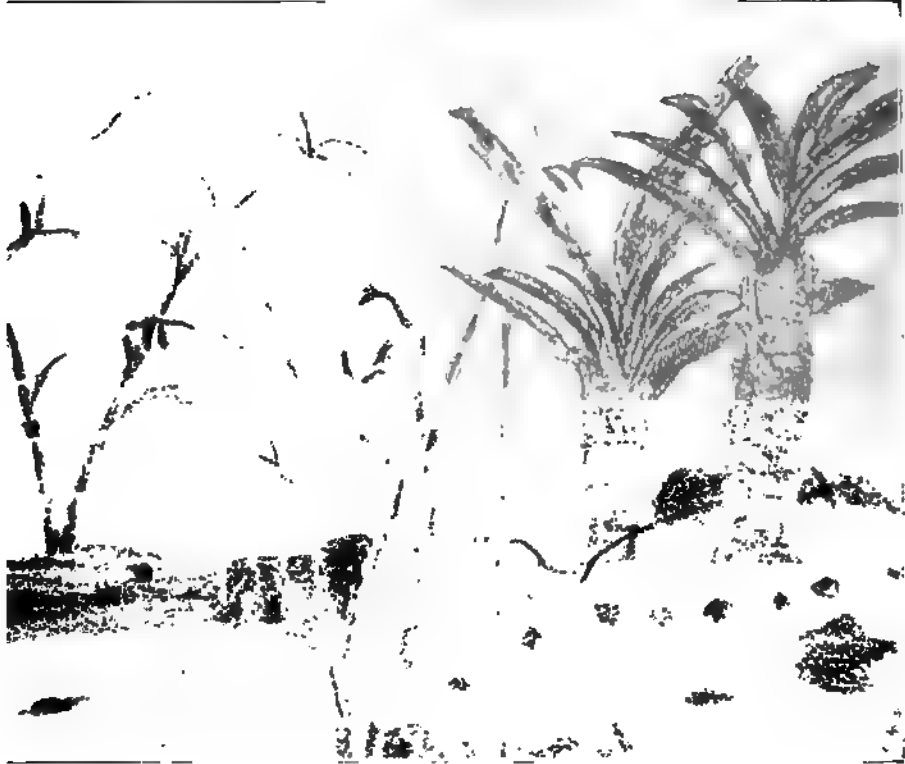
ENGLISH EXPLORERS AND POSSESSIONS IN THE NEW WORLD.

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Life of Sir Francis Drake.....	w
The Capture of the Armada.....	w
Why I like "Westward Ho".....	w
Picture of Drake's Capture of Spanish Treasure Ship.....	d
Picture of Drake's Capture of Gold-laden Donkeys in Panama.....	d
Diagram from "Our Ancestors in Europe" of the formation of the Ships in the Capture of the Armada.....	
Work of Henry Hudson.....	w
Map of Hudson Bay.....	d

CHAPTER V

FRENCH EXPLORATION AND POSSESSIONS IN THE NEW
WORLD

The Work of the French in the New World.....	w
French Trappers.....	w
Jamuel de Champlain.....	w
Jacques Cartier.....	w
The French Who Explored the Interior of the New World.....	w
French and English Enemies in the New World.....	w
Map of French Explorations.....	d



died and they caught the wording of the old documents with some success. Among others of this type appear the following titles:

- Columbus' Letter to the King and Queen
- Columbus' Letter addressed to His Sailors When About to Enter Rio
- A Letter from Balboa to the King of Spain
- Montezuma's Speech to His Countrymen
- Pizarro's Speech to the Montezuma's Son when He Came to Hunt
- Señor D. Colon's Letters

Two of this type of paper follow:

DIARY OF PONCE DE LEON

(copy of 1539)

In this land I have found many wonderful things, some more wonderful than all. People say that there is a river in it in that is set with precious gems, and from it flows the most sparkling water. We have also found this

fountain and bathe and drink from it, will be made young and strong forever. I am an old man, and I go to seek until I find this fairy fountain. Then shall I drink from it and be young again.

I have persuaded a company of trustworthy men to join me in this search and to-morrow we set sail from Hispaniola, my home these many years.

April 2, 1512.

I have stopped at one place after another among these islands, I have tested each fountain that I came upon, but so far I have not found the right one, I grow older and more weary.

April 5, 1512.

My provisions are giving out, and I must turn back soon.

Easter Sunday, 1512.

To-day we came to the most beautiful shore that I have yet seen. Flowers bloom abundantly, the air is full of sweet odors. I will name it Florida, the dear Spanish word.

March, 1513.

The King of Spain has made me governor of Florida, the wonderful land that I discovered and claimed in his great name.

This diary of Ponce de Leon came to me through my mother, who was a niece of that worthy man and great discoverer. My father was one of Ponce de Leon's men, and I think this diary so lovely that I will have it published.

Juan Sarillo

Hortense H.

CHARLES I OF SPAIN

Your Majesty and my kind friend:

Your humble servant begs to address you.

The nations of this new country which I have just come upon are highly civilized Indians. They call themselves Aztecs.

I have just taken Montezuma, their king, as a hostage, and hold him prisoner because we feared an attack from the natives. A messenger told Montezuma of the guns and horses which we own and of which these Indians are much afraid. So to make friends they gave us many gold and silver articles. They have given me a plate of gold as large as a cart wheel. They have great temples covered with gold. I hope to capture the city and send to you vast riches.

Your loyal soldier,

Hernando de Cortez

Edward W.

Nov. 22, 1922.

H. R.

November 14, 1922.

MARCO POLO

In Venice there lived a man by the name of Niccolo Polo, and his brother Maffio Polo. In about the middle of the thirteenth century Niccolo and Maffio Polo set sail for the great Khan of China's kingdom, and the palace which was in Peking.



On the way to the desert, the two men passed a small village. Three years ago, the village had been destroyed by a great Khan invited them to live in the desert.

After many days of travel, they reached the desert and got some food from the people who lived there.

When they reached the desert, they found a small village. When they had died, they found a small village. When they had died, they found a small village. When they had died, they found a small village.

"Well, my good son, we are going back to the Kublai Khan with two friars in a few days, and you may go along with your uncle Matteo and me," said Niccolo one day to his son Marco, after he had told him of the great Khan. "Gladly I will go to the Khan's kingdom with you and my uncle," said Marco.

In a few days they set sail, and when they were half way there the two friars left them and sailed for Venice. But they reached China safely, and when eighteen years later they wanted to go home the Kublai Khan said, "I will behead you if you go!"

At last one day the chance came. The Chinese princess was to be married to a prince in Persia, and the Kublai Khan would trust no one with the princess but the Polos. So they set sail.

On their way they went, until finally they reached Persia. But when they got there the Prince was dead.

So the father of the prince said, "I need a wife, so I'll marry the princess myself."

Now, as the princess was going to be married to the king, the three Polos left Persia and went straight on to Venice.

When they reached Venice they went to their old home, and knocking on the door Niccolo said to the servant who opened it, "Let us in, for this is my house. I am Niccolo Polo who went to the great Kublai Khan's kingdom a long time ago." The servant said, "No. No. you are not the master of this house! Here is the master. I will call him. Oh, Master! Master, there is a man at the door that wants to see you. He says he is the master of this house!" The master coming out of the house said to Niccolo, Matteo, and Marco Polo, "Are you crazy men to want to claim my house and say you are the owners of this house! Don't you know a long time ago Niccolo and Matteo and Marco Polo were all killed! Two friars came back and told us, but you may rest for the night here and I will feed you in the morning."

Dorothy A.

In both history and geography certain interests have led us afield to produce a bit of handwork or some objective outcome such as:

Making a compass.

Constructing on a sphere the lines of latitude and longitude; then painting in the continents based on our previously set latitude and longitude guide lines.

Making a model of the Panama Canal Locks.

Modelling the Panama Canal Zone to a scale.

Representing in a sand pan typical scenes,

a scene in Peru beyond Cuzco,

a scene in the Desert of Gobi,

a scene in the Spice Islands, etc.

At times instead of sand models the children have made a peep-show to carry out some such scene.

A scenic stage where not plays, but typical historic scenes could be set up was enjoyed by one group of children.

Many geographical topics, and some astronomy, have to be treated in this connection: 1. Size of the earth, compared with Columbus' calculations; 2. How the earth is measured and why we know now better than Columbus knew; 3. Shape, how proven, compared with Columbus' idea of the shape; 4. Latitude and longitude; 5. International date lines; 6. Seasons north and south of the equator; 7. Trade winds; 8. Columbus' caravels, in rigging and equipment. Direct observations on North Star and sun for calculations of latitude and longitude are surer of being understood if the instruments are simplified to somewhat the form of the astrolabe and cross-staff of the fifteenth century.

Editor's Note: Dr. Lukens, who has been making a trip around the world, was unfortunately out of the school when these outlines went to press. In his absence this fifth grade outline was made by Elsie A. Wygant, and gives the work as carried out by her. The last paragraph above is incorporated as written from notes left by Dr. Lukens, and suggests (because of its brevity quite inadequately) the unique and splendid work done by him in making boat models and apparatus with the children.



SIXTH GRADE

AMERICAN HISTORY—WESTWARD EXPANSION AND IMMIGRATION

The topics for the year's study cover the territorial growth of the United States and the westward trend of its population. The acquisition of new lands is not particularly emphasized, chief stress being laid upon influences which brought about the peopling of newly acquired areas. Prominent among these influences are: (1) events in the life of our nation which set its people adrift and directed their movements westward; and, (2) world events which set foreign groups in motion and attracted them to our shores.

A study is made of the major groups of early immigrants, i. e., French, Irish, German, and Scandinavian, to learn what brought them to America during migration periods, how their coming affected the peopling of America, and why they became localized in certain areas of this country. The following topics outline the general plan of the year's work:

IMMIGRATION AND WESTWARD EXPANSION*

I. PREPARATION FOR EXPANSION

(a) THE COASTAL PLAIN

1. Claims of England, France and Spain in America—Spain's power declines—France and England become rivals in the new world—Contest for the continent begins—France strengthens her hold on the continent.

2. Virginians cross the mountains—Christopher Gist explores the Ohio—The English warn the French—Washington's journey—Advantages and disadvantages of the French.

3. The Seven Years War—Pitt plans for England a winning campaign—England wins the west.

4. Why the English were content with the coast—More men come to the coast plain (Huguenots, Germans, Scotch, Irish)—The colonies need more land—The "long hunters" explore the interior—Boone finds Kentucky—Principal buffalo and Indian trails of the interior.

* The material outlined here is being published by Ginn and Company, under the title *The Making of America*.

II. PERIOD OF WESTWARD EXPANSION

(b) BEYOND THE ALLEGHANIES

1. (Kentucky) Boone makes the Wilderness Road—The founding of Boonesborough—Westward expansion delayed by the Revolution—The two minor migrations during the Revolution—Great westward expansion after 1783—Immigration of English, French, and Irish at the close of the Revolution.

2. (Ohio) The states give up their western land—Foundation of the Northwest Territory—Washington's soldiers make the first settlement—Growth of the Ohio River towns—The Government establishes forts—The Ohio becomes the main highway westward—The Spanish interfere with Ohio Valley trade—Purchase of Louisiana—Lewis and Clark explore the new land.

3. Uniting the East and the West—Steamboat—National Road—Erie Canal.

4. Filling in the Ohio Valley states—Westward migration of Americans—The crest of European migration—English, Irish, Germans, Scandinavians.

(c) BEYOND THE MISSISSIPPI

1. The fur trade opens the Great West—Work of the big companies—John Jacob Astor and the trade of the Northwest—The fur trade collapses—Emigrants on the Oregon Trail.

2. Frontier encounters Spanish claims on the Southwest—Pike goes to Santa Fe—The United States acquires Texas, New Mexico, California.

3. Discovery of gold in California—The three routes to the gold fields—Rush of emigrants over these routes—Coming of Orientals—California gets a permanent population.

4. Filling in the Great Plains—Discovery of gold in the Rockies—Miners settle there—Cattlemen invade the Great Plains—Homestead laws bring in permanent settlers—Binding the scattered population groups together by overland mail, pony express, and transcontinental railways—The public domain as it is to-day.

5. Industrial centers shift toward the west—Railroads make possible the specialization of industry—Business brings men together in towns—The towns move near the source of

production--Westward shifting of business and of certain industries.

The subject matter here outlined forms a transitional body of material from the World Expansion idea of grade five to the European History of grade seven. It continues the story of the westward trend of world population made familiar to the child in his study of early exploration and discovery in grade five. Its treatment of the causes of emigration of Old World peoples forms an introduction to the study of European History in grade seven. Moreover, the social character of history and of its related subjects makes an understanding of the composition of American society a desirable preparation for the work of the upper grades in civics and history.

The course was not originally planned as here outlined. It was first given as an outgrowth of the topic of Transportation, which once formed the center of the year's work. It was then merely a history of westward travel in America, tentatively planned for experimentation. The material was not in printed form, but was worked out with the use of reference books, special reports, etc. As the children's interests were acted from year to year, many of the topics originally tried were omitted, some were greatly expanded, some were added. At the close of each class discussion as many of the children's questions as could be recalled were recorded. These records helped to shape the plan of work for the next year. Thus the outline gradually assumed its present content, the teacher filling in whatever topics were necessary to give to the whole the form of a continuous narrative.

When the reactions of three successive grades upon the subject matter had shaped the plan into something like its present form, parts of the material were written by the teacher and prepared by the school in the form of mimeographed leaflets. The topics first put into such form were those on which authentic accounts could be found only in original sources. Little of the history in old journals, newspapers, diaries, etc., is available to children, and the personal character of such material gives it an organization difficult for their use as reference matter. From such sources printed lessons were prepared, quotations from the original being used wherever they added

clearness and reality. From time to time more of the material was put into leaflet form, until at present there is some printed matter on each of the topics here outlined.

As the work progressed the children accumulated the typed lessons in loose-leaf notebooks. The advantages of such a plan are many:

1. No reading is done on a topic until some particular piece of information is needed.

2. The leaflets are made use of only after some otherwise unanswerable questions have arisen. The reading is, therefore, always purposeful.

3. The child cannot use the textbook as a substitute for his own thinking. When a topic or problem comes up for class discussion it is first thought through with the aid of only such resources as are immediately available to children, previous knowledge, past experience, maps, and pictures. Then the leaflets are used by the children for comparison, and for additional information. But the teacher has an additional purpose, to leave the whole in organized form in the child's mind.

The following stenographic report of a class discussion illustrates the thought given a problem or topic before the mimeographed lessons are used:

HISTORY DISCUSSION

At a previous discussion on England's acquisition of the West the class was speculating as to what the English would do with their newly acquired lands. They were then told that the English made no attempt to use them, but continued to live on the coast for ten years after they had driven out the French. Jane's "That's queer! They'd been wanting the lands for so long I should think they would have rushed right in," brought up the following discussion, of which a stenographic report was taken.

HISTORY LESSON

Teacher. What question did we leave for discussion to-day?

Victor. Jane's. About why the English colonists did not go into the wilderness as soon as the war was over.

Teacher. Let us see if we can think out the reason.

Edgar. They were still afraid of the Indians.

Charlotte. All of the Indians had been on the French side, and if the English ventured into the wilderness the Indians would attack them. If they waited ten years the Indians would forget.

Dorothy. I think the reason they did not go west was that the Indians were allied to the French. The Indians did not come to the peace treaty, and therefore they had the right to fight on. The French made the peace treaty and could not fight any more.

Teacher. Yes, the Indians thought they could go on fighting.

Ann. I think that because they won so many victories in India and Europe and America, probably lots of people stayed over there and not so many came to America.

Teacher. Does everybody see Ann's point?

Peggy. I don't.

Ann. After they had won so many victories all over the world, the English people would not want to always come to America; they would go to France and to India. Not so many people would come to America to explore the French territory.

Teacher. Yes, Ann is right. We found yesterday that the English had extended their territory. They had gone to India and to Australia and to New Zealand, and the English people had some place else to go besides America. Were there any other reasons why they clung to the coast in America? There must have been, or they would have rushed away, as Jane suggested yesterday.

Jane I. They had signed a peace treaty. They could not fight any more. Perhaps they wanted to finish their industries and make them larger, and maybe when they were all ready and had food and wagons made and things like that, they would go into the land they had just won.

Maurice. They had been fighting so long they were nearly exhausted. They had suffered so much during all those years, and at last they had won, and they didn't want to move right away.

Virginia. Yes, the English colonists were exhausted because they had been fighting so many years and were just at the last end of the war, and the Indians had not come into the treaty and they were not sure whether they would fight them or be at peace with them and they thought they would wait until they were better fitted to fight.

George. I should think that if they went out into the wilderness it would take them a long time to raise crops; it might take them some years.

Teacher. Yes, they had the same reasons that we would have today for not wanting to live in the wilderness. What are some of them?

Jane. It was usually damp there. We know that there were swamps in some places, and they could not live there because they would all be sick.

Teacher. Yes, that is right. The forests were so dense in those days that the sun's rays did not penetrate. When the trees were cut away the damp earth was exposed to the sun suddenly. That caused a good deal of illness.

Alice. If they were in the wilderness, no food could get to them. There would be no way of getting it until they could clear the ground and raise crops.

Marian. And if the Indians attacked them they would not get help.

Teacher. I have in mind another reason. How did the English king feel about this?

Charlotte. The English king was afraid if they got so far away he could not handle them.

Frank. He wanted them to buy all their food from England and send everything they raised there. And if they went into the wilderness they might choose another governor and he would not be their ruler.

Maurice. I think another reason is that the English king at that time was much against Catholics; he wanted people only to worship in the English church, and that is why so many people left England and came over here. The English king was rather imperative about religion. He was afraid they would go out there and worship as they pleased, and that he would not be able to control them so far away.

Teacher. Have we had any evidence before this that he did not want his people to go west?

Children. Yes.

Frank. He didn't send his armies over at first because he wasn't sure he wanted the West.

Victor. Don't you think that one reason the colonists didn't go west was because they could not raise crops at first and they would have to live on game, and the game soon went away?

Teacher. Yes, there was always fear that the new region might not support them. And there is something else. You know your parents would not want to move to a place where there were no schools for you to attend. Many people thought that they must stay near the settlements where there were schools for their children. But the colonists would have gone west anyway if there had not been other reasons. Turn to page 8 of your geographies, and see if there is anything along the eastern coast that would make people want to live there.

John. Ships could reach there, and if they were in the wilderness the ships from England could not reach them.

Teacher. If you had lived here (pointing to England and America on wall map), could you think of any reason why you would prefer to live here on the Atlantic coast rather than out here in the wilderness?

Narcissa. They were so much nearer to the mother country, that if anything should happen that they would get into war with France or any other European country, they could get to them quickly. If they were on the other side of the mountains they would be cut off from home.

Mariana. Also the colonists were thinking of Spain then too. Spain owned west of the Mississippi River. And if the Spanish got up enough force they could come across the Mississippi and fight the English colonists and the mother country could not get at them.

Teacher. How many times had England defeated Spain up to this time?

Virginia. Twice. Once at the time of the Spanish Armada and this time when she came in to help France. So I don't believe the English colonists were thinking about Spain.

Jane K. The English were good on the sea, and they controlled the coast. In case any other nation came to this country, they would have to come to the coast or up the St. Lawrence. Then the English could keep them out.

George. And they also had the best fishing grounds here around the mouth of the St. Lawrence and about Boston, and they wanted to stay near them.

Teacher. What else did these people depend upon besides fishing? There must have been something very worth while to hold the people there for such a long time. Doesn't your map suggest anything else to you? Here are rivers flowing down to the Atlantic. Do you see that long line? (The fall line.) What does it suggest?

Edgar. All the rivers have water falls.

Teacher. Of what use are they?

Peter. They furnish water power for mills.

Teacher. What other use is there for rivers flowing from mountains down to the ocean?

Amy. They could cut down trees and put the logs in the river and float them down.

Teacher. (Sketching diagram.) They cut the trees here and float them until they come to the falls in the river. Then what happens?

Amy. Oh, I see, they have the mills here and cut them up into lumber and then the lumber could float down the river to the coast.

Teacher. What would it be used for there?

Children. Houses, ships.

Peter. They needed ships as much as they needed houses.

Teacher. If you look up here where the coastal plain is very narrow you will see that many of the rivers flowing from the upland to the plain have these falls. That made ship building an easy industry to begin. Now look at the map on page 13 (a product map) and see if it suggests anything else to you.

Virginia. They had so many different things that they could ship to Europe from there that they liked to live on the coast. (Reading) "Iron and steel and cotton and grains and leather goods."

Edgar. Iron and steel they did not have in the early days, did they?

Peggy. Didn't they have iron in the very earliest days? We learned last year that there was some iron in the coastal plain.

Teacher. There was iron along the coast, but it was not a very good quality. Select from the names on your map just the products which the colonists must have had.

Children. Fish, lumber, hides, wool.

Alice. There must have been furs too.

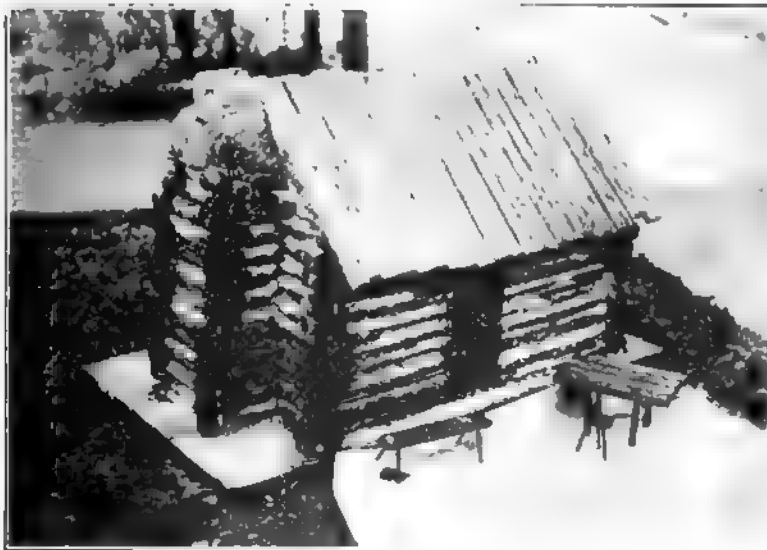
Teacher. Yes. You see they had many things to depend upon at home and they did not wish to risk a new and uncertain part of the country.

Edgar. There are many good harbors on this map too, so they could send things away easily.

Teacher. I think we have answered the question as well as we can from the information we now have. These typed sheets contains some additional reasons why the English loved the coast. As you read you may number in the margin all of the reasons that we did not think of in class today.

It was soon found that the amount of detail possible in the plan, i.e., the expansive treatment of a special field, stimulates children to do much related reading. Thus there came a need for something more than the printed lesson sheets. The reading

shelves in the grade room now contain many books dealing with a wide range of related material. These books were supplied by the school library and by the mothers of grade children, one book of the teacher's choice having been presented to the grade by each mother. Two periods per week are devoted to free silent reading, and the children are privileged to use the books at any free moment during the school day, or to withdraw them for evening use. In this way the children acquire a fund of information that can be drawn upon to solve class problems, to supplement class discussions, and to assist in the carrying forward of special enterprises. Pupils who prepared the Morning Exercise that appears later on had such help as "Jack can find a picture of Boonesborough in Thwaite's *Daniel Boone*", "Ralph can find a good description of the Wilderness Road in Dunbar's *History of Travel*."



CONTRACT PROJECT OF FIFTH

RETURNS FROM THE CHILDREN

The extensive readings and class discussions arouse special interests which are often directed toward the carrying out of some group or individual enterprise. The help of the special teachers who follow the work of the class by reading the printed lessons, is often enlisted for the carrying out of such projects. The two

projects here given illustrate the co-operation of special departments and indicate the two types of work that arise: 1. That proposed by the teacher, but so vitally connected with the children's interests that the purpose becomes their own, many self-actuated bits of work being carried on by individuals as their contributions to the whole; and, 2. That initiated by individuals or groups, and carried out with the assistance of a teacher.

PROJECT OF TYPE 1

The building of the cabin was suggested by the teacher of manual training. As the boys worked, many possibilities suggested themselves, and they planned the removable rear wall and the furniture.

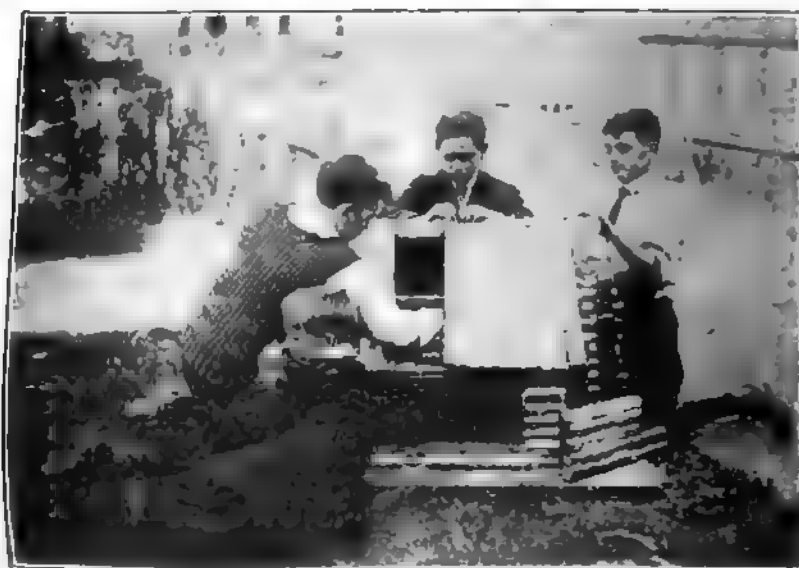


FIGURE 1. REAR WALL

They began work in the spring, and the cabin was not completed at the close of the school term. The same group of boys completed it the next fall, building the chimney higher, putting on the door, making a ladder to the attic, and constructing additional pieces of furniture.

The completed cabin was presented to the school, and is now part of the museum equipment.

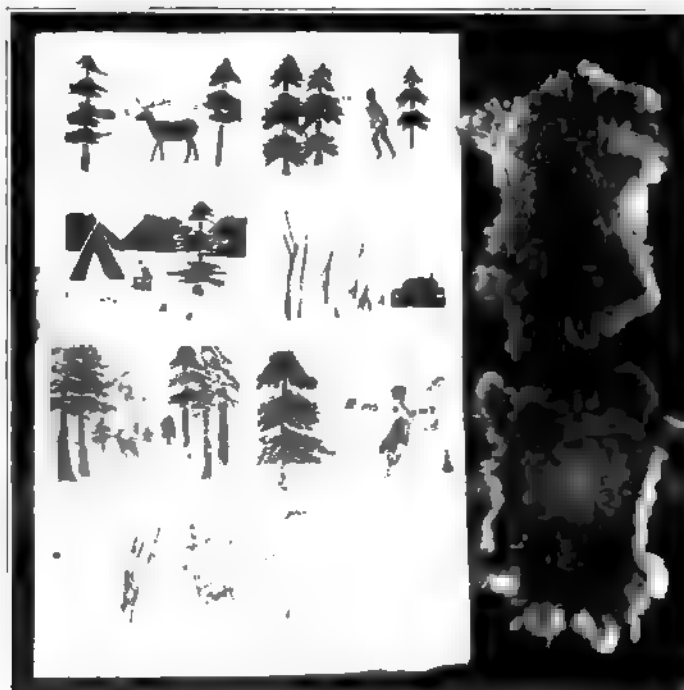
PROJECT OF TYPE 2

I. Ned B. was curious about hunters' methods of preserving and tanning hides. The art teacher offered to help find out how it was done. They found some literature on the subject and began experimenting with rabbit skins. Other children became interested, and a group of them tanned skins, and also made leather. The boy



FIGURE 1. A HUNTER'S SUIT

in the deer-skin suit was posed by the class for illustrations they were making for their history notebooks. These illustrations are intended to show incidents in the daily life of a hunter.



SOOT-BIRD ILLUSTRATIONS AND RESULTS OF NED'S PROJECT—TYPE II

11. The making of the flat boat was suggested by John S. All the boys in the grade group helped prepare the timbers. Three boys who were especially interested worked with John on the construction of the boat.

Many types of flat boats were discussed with the teacher of manual training before the boys determined which should serve as a model. The design finally chosen was from a sketch found in an old journal—(Collet's *Journey in North America*, 1826.)

Not all of the pupil-initiated work is manual. Ideas and emotions occasionally find expression in story or poetry. A number of free, imaginative bits of writing have been contributed to the various Sixth Grade groups by children stimulated by some point of interest in the subject matter. The following narrative and poems are reproduced as originally written, except for a few errors of form which the writers had corrected on the final draft.



AN OHIO RIVER FLAT BOAT. A PROJECT OF TYPE II

MY LIFE AS A HUNTER

The first eleven years of my life I spent with my father, mother, brother and sister. We lived in a small log cabin in which I was born. It was situated in the wilderness between the Illinois and the Wabash Rivers. My brother and sister were born in France and were constantly talking about dear old France and their gay life there. They teased me because I had not enjoyed the gay and easy life, but father said that I was a lucky boy to be born in America, and that the reason that I was as strong as Louis, who was sixteen, was because of the out-door life I had led.

Mother had a small garden in back of our cabin in which she raised her crops. Father was a backwoodsman who used to bring home many pelts such as beaver, otter, fox, mink, wolf, bear, and rabbit. He also had buck-skin out of which he made leggings and jackets for us.

After I was eleven years of age, I lived the life of my father, hunting, trapping and trading. I soon became perfectly independent and wandered about the forests at will. That was ten years ago. Many changes have come into our lives since then. My brother has joined the army at Kaskaskia, my sister has married a young Captain at Quebec, but I am still a hunter. The game is very plentiful and my canoes are laden with furs and skins which, with the help of Fighting Bear, who is a young Indian, I occasionally take to Fort Kaskaskia to sell. Once when I came in full view of the fort, I found the cannon up, and all around and inside the fort were men with guns. That of course meant war, but

I was very much astonished for I had heard nothing of the trouble with the English colonists. I expected to be drafted, but to my surprise I heard that most of the soldiers would be sent from France and the backwoodsmen could go on hunting.

After a short time, I again returned to Kaskaskia, and when I arrived I found the men very light hearted, for General Braddock, with one thousand British soldiers, had been defeated. "If France can do that," they said, "she can surely win the war."

A report of fresh hunting grounds now took me away to the far Northwest, so it was many months before I saw Kaskaskia again. At the end of the season, with my canoes laden with furs and dried meats, I floated down toward Kaskaskia. It was hard work to guide the canoes, for there were five of them, all laden with the success of my hunt. What was my dismay when my first glimpse of the old fort showed the British flag. I looked anxiously about the fort for a friendly face and when I was just about to give up, I saw the familiar face and buckskin clad figure of my friend, Francois La Cour. We wandered about till we found a shady spot, and there he explained to me what had occurred during my long absence. The English had captured our two best forts, Montreal and Quebec, and had won the war. He spoke of the insolence of the British soldiers who were now stationed at the fort, and of the great fur trade that was now going to England instead of France. That made me wonder that if every time I brought in furs I would encounter the insolent English soldiers. I knew that the only way to avoid this was either to go to France, or to lose myself in the wilderness where I would not have to see the hated British. The thought of leaving my pleasant and exciting life, I could not bear, so I finally got all the things that I needed, and started to go far into the western wilderness, where I hope to spend the rest of my life.

Narcissa S.

THE LAND OF THE SUNSET

Down the long gray aisles of the forest,
Over grassy plain and marshy hollow,
Far away over the blue distant hills,
Stretching on toward the land of the sunset,
A lone hunter picked his pathless way.

Virginia McG.

PIONEER'S ADVENTURES

Beyond the Alleghanies
Where many a man had failed
To find the great unknown
I longed to wander forth,
So I ventured toward them,
Tramping wearily over the mountains,
Searching through the primeval forests,

Wading through the merry streams.
 Plentiful was the game in the forest,
 Plentiful were the fish in the stream,
 And many the fowl in the air.
 Then I sought myself a site
 To build me a shelter.
 I came upon a little upraised land
 With trees grown thickly upon it.
 I at once set to work
 To clear a little opening
 And with the logs I cut
 I erected a little shelter,
 And thus I found my longed for land.

John M.

THE MORNING EXERCISE

Another natural outcome of the subject matter is the morning exercise. The stenographic report here given shows how the reading, art, oral composition, and history can be utilized in cooperative social effort.

Not every child in the grade took part in the exercise, but all helped plan it, and each contributed an illustration for use in making the story interesting to others. The pictures, here greatly reduced, were about 24" x 30", large enough to be seen from any part of the school auditorium.

The following books on the grade reading shelf were used for reference; and the children who had read them aided the pupils who were preparing the exercise.

Daniel Boone	Lucile Gulliver.
Daniel Boone	R. G. Thwaite.
Boone and The Wilderness Road.....	Bruce.
Pioneers of America	Blaisdell and Ball.
American Hero Stories	Tappan.

DANIEL BOONE AND THE WILDERNESS ROAD

In early colonial days all of the land in North America -- that is, most of it -- was owned by two nations, England and France. England claimed, or rather had settled, only the narrow strip along the coast east of the Alleghanies, while France had all of the region drained by the Great Lakes and the Mississippi River.

As more people came to the English settlements, they began to need more land, and at last, after a great war, the French were driven out of the interior. But not all of the British generals who fought against the French were victorious. One of the unsuccessful ones was General Braddock, who led an army against the French fort where Pittsburgh now stands.

The southern colonies did not take much part in the war, because the French and Indians were so far from their borders, but North Carolina sent two hundred volunteers to join General Braddock's army. They went by forced marches all the way to Cumberland on the Potomac River, where Braddock was preparing for his expedition. When one of these men enlisted, he was asked what he could do. He said that he could hunt, farm, trap; that he knew a little of Indian ways; and that he had some experience as a blacksmith. Braddock, who was taking a wagon train into the wilderness, was glad to put him to work as a blacksmith, but if he had known who this man was, he probably would have placed him at the head of the army. He was Daniel Boone, the famous scout and backwoodsman.

But it was not so bad for Boone, after all, that he was kept at the rear repairing wagons, for here he met John Finley, a hunter and trapper who had been to Kentucky. Finley told Boone all about that region, and also told him the best route to reach there. This picture shows Boone and Finley walking behind Braddock's men. (He pointed out a man in a red uniform) This is a British soldier.

Edwin R.

At the close of the French and Indian wars, Daniel Boone went back to his home on the Yadkin River, in North Carolina. Here he was married, and his little son James was born. They lived in a very primitive cabin made of logs.

Daniel Boone had four occupations. The first one, and the one he liked most of all, was hunting. The second was farming, the third was being a blacksmith. He could work as a blacksmith better than his neighbors, and they brought their work to him and he did it. His fourth occupation was this: Every year a big wagon train went down to the coast cities and came back with such implements and supplies as could not be had in the wilderness. Daniel Boone always went with this.

He used to take his little son James with him on his hunts and exploring trips, partly for companionship, but mostly for his son's education. One time, although they did not know it, they penetrated to the eastern part of Kentucky. There a blizzard stopped them, and they had to return. This is a picture of Daniel Boone coming home after he had been on a hunt. Here is his little son, playing with the dog.

The utensils of the house were very crude and primitive. There was a large kettle for cooking, and nearly all the dishes were of wood. Boone always used his hunting knife, and he despised the crockeryware which was just then making its way into the valley, as he thought it was

designed for the sole purpose of dulling a knife. At the further end of the cabin was a big fireplace, into which went logs from five to six feet long. This is a spoon (holding it up) that was given to Mary Ann Kerr by her father as a wedding gift. She was a niece of Daniel Boone, and he was then in the family. He must have used it. It came all the way from England. It is engraved, and it has the stamp of the firm that made it on the back.

Richard H.



BOONE PASTURES HIS FLOCKS. AND GENTLY DREST. OF KENTUCKY
THE BOONE CABIN ON THE YADKIN. AND V. AFFAIRS AT THE BOONE HOME.

As the years went by, Daniel Boone thought less and less of the beautiful land Finley had told him about. He might never have gone there if he had remained contented in his home on the Yadkin, but several things were happening that made him become dissatisfied. Many strange people were coming into the Yadkin Valley. As they came, they pushed the game further and further back into the forest. When the hunters went out, they were sometimes gone two weeks, and they would not have any game to bring home, while in the other days they could kill twenty or thirty deer in one day. Free land, too, was becoming very scarce. When the settlers first came, they could clear the land and plant crops, and the land was theirs. But now they had to go to the farmer who owned the land, and buy as much as they needed from him, as every acre had been taken up. When Boone was a little boy, he had to take the cattle five miles away from home, and his mother would go with him. When he grew to be a man, he had to take the cattle sixty

or seventy miles away from home, because there was no free pasture near the settlement. All these things made Daniel Boone dissatisfied, and he wanted to go to the beautiful land beyond the mountains. This is a picture of Daniel Boone taking the sheep to the mountains for pasture.

Ruth N.

One day, as Boone was working in his garden (for he could seldom hunt now, for the game had been driven back into the interior), he looked up from his work and saw a peddler's wagon drive up to his door. He went to see who it was, and was surprised to see his friend John Finley, whom he first met in Braddock's army and whom he had not seen for eleven years. Finley was Boone's guest all winter, and Daniel and his son were eager listeners to his stories of the land beyond the mountains. This inspired Boone to go into Kentucky, so when spring came Finley and Boone, and Boone's brother-in-law, John Stewart, got ready to go on a hunting trip. They took with them three wood-cutters and camp-makers. Each wore a deerskin suit, with a belt which contained a hunting knife, a powder horn, a pouch of bullets, and a wallet of parched corn. They carried long rifles. They expected to stay in the wilderness many months, as they wanted to hunt throughout the season. This picture shows Finley driving up to Boone's door.

John G.

After careful planning, Boone and Finley decided to go into Kentucky by way of Cumberland Gap. They chose this route for two reasons: Finley had gone into the region once before and knew of the pass here, and Boone had found it on one of his hunting trips. Here is Cumberland Gap (pointing to the map).

Both Boone and Finley knew that this region was practically uninhabited by Indians. Finley had found that out during his previous trips, and Boone suspected it from the knowledge he had gained while hunting. This was the best hunting ground east of the Mississippi River. The Iroquois and other tribes north of the Ohio, hunted there, and so did the southern tribes, but no tribes were strong enough to keep it from the others. Whenever the tribes met here, terrible battles were fought, and for that reason it finally became known as the "Dark and Bloody Ground." It was also called "No Man's Land," because it was not owned or occupied by any Indian tribe.

Gordon B.

Boone and his companions pushed on over Indian paths and buffalo trails until they reached a branch of the Kentucky River. Here they made a camp which they called Station Camp, where they expected to store their skins and furs.

They usually went out hunting in pairs, partly for companionship but mostly for safety. Boone and Stewart usually hunted together. One day they got separated from each other, and Boone went into camp to wait for his friend. But Stewart never came back. His disappearance so disturbed the others that they wanted to give up the hunt and return to the settlement. As the returning party was on the way home, they

met Boone's brother Squire. He was going out to join the party, with ammunition and supplies. So Boone and his brother stayed in the wilderness and hunted all that winter. When spring came, their ammunition gave out and Squire returned to the settlement to get supplies, and to pay their debts. So Boone was left alone in the wilderness for three months. He hardly ever cooked anything, for fear the Indians would find him by the smoke of his camp fire. He had many narrow escapes. Once while walking along the river, Boone saw an Indian calmly fishing. Boone crept up behind the Indian and shot him. The Indian fell down into the water. This was lucky for Boone, because if he had escaped he would have told the other Indians.

In July Squire came back again with horses and supplies. They hunted all that winter and spring, and when they returned home it had been two years since Boone left the Yadkin Valley. They had been away so long that people had given them up for dead, but Boone and his brother now knew more about the interior than any men living. *John G.*

When Boone got home, he found that many of the people were dissatisfied along the coast, because they were so greatly in need of land. There were two reasons for this: one was that foreigners were coming in great numbers. These were the Huguenots from France, the Scotch-Irish from Ireland, and Germans from the Rhine lands. The Scotch-Irish settled in Pennsylvania and North Carolina. They had to push far back into the mountain valleys, because there was no land to be had along the coastal plain. The Scotch-Irish from Pennsylvania moved southward in the mountain valleys, and those in North Carolina pushed northward until there was a long line of them between the red men in the interior and the settlements on the coast. Virginia needed land more than any of the other colonies. One reason for this was that in Virginia tobacco was the chief crop, and it required very large areas. One year they planted crops in one place and the next year the soil there was poor, and so they would plant it in another place, leaving the first land vacant. This caused much vacant land, and the people found it very hard to do anything. Boone found the people very much discouraged, and he tried to get them to go beyond the mountains. *Stewart W.*

After Boone returned home from his long hunt, he persuaded five families to go into the wilderness with him. They made preparations all winter and spring, selling their farms and their goods and keeping only what they needed for their trip. Boone planned their line of march very carefully, so that the Indians could not attack and get the best of them. He placed guards all around, so that they could see the Indians if they approached. The cattle and pigs traveled slowly, as the surface of the ground was very rough, so the front of the procession took a shorter time than the rear. One evening the front went into camp and was waiting for the rear to come up. They did not come, and they did not come. They waited all that night. Toward morning a man from the rear guard rushed up with the news that the Indians had attacked the party and

killed five men, among them Boone's son James. This discouraged the farmers, so they gave up their plans and started back to the settlement. Boone was still determined to make one more attempt to reach Kentucky. He accompanied them forty miles on the way home. There he left them and followed the Clinch River into Virginia, where he occupied a deserted cabin which he had seen on the way out. He stayed in this cabin two years, and then made his second attempt to go into the wilderness.

Charles A.

In 1775 Daniel Boone resumed his journey into the wilderness, — this time at the head of a band of picked men who had been chosen to cut the road into Kentucky. He was hired to do this by Richard Henderson, who had bought a large tract of land in Kentucky from the Indians and wanted to make a settlement there. Boone took his old route through Cumberland Gap. After he had passed that, he came to the most difficult part of his trip. First there were twenty miles of dead forest, and after that thirty miles of cane brake. They had to chop every inch of their way through these fifty miles. Then they came upon Warrior's Path, which they followed northward until they came to a buffalo trace. They followed this west for a short distance, and then north again until they came to the Kentucky River. Here they built a fort. This path, which Boone had cut into Kentucky, was for many years the main highway into the interior. This is a picture of Boone and his axemen cutting the road.

Ralph S.

Daniel Boone chose this site for a settlement because the ground was very fertile. The river was on one side and on the other was a lick, where wild animals came. Here is a birdseye view of Boonesborough. There was a high stockade, with a blockhouse at each corner. The upper story of the blockhouse projected over the lower, so that Indians could be fired upon if they came too close to the stockade. There were about thirty cabins, and the sides of the stockade were made by the backs of the cabins.

Henderson had a store inside the stockade, where the men received their pay in gun powder and supplies. A man, if he was not satisfied with the fortress, could have two acres of ground just outside, and if this did not suit him, he could have any number of acres a short distance away. Most of the cabins had just one room, unless the settler was more prosperous, and then there were two. When the Indians were located anywhere about, a messenger was sent out to warn the people in the cabins. If it was at night, he would tap softly on the windows. The children were in constant fear of Indians, and were always as still as death when they knew they were near. Care was always taken not to awaken the youngest child for fear it would cry and the Indians would know where they were. They would all hurry to the Fort, and the next day the men of the family would go back to the cabin and bring their goods. The families did not usually occupy the fort except when in danger from Indians. They preferred to stay in the wilderness, where they could clear their ground and tend their flocks.

Jack C.

During the Revolution, the Indians tried to destroy as many of the border towns as they could. They either set fire to the stockades or tried to starve out the settlers by driving away the game. Once during the Revolution, Boone ran out of both gunpowder and salt. Without gunpowder, he was unable to shoot any game, and without salt, he could not preserve it. So on the first of January, he set out with a company of men to go to lower Blue Lick to make salt. For about a month all went well. Some of the men drew water from the springs and evaporated it to get the salt, while others went out for game. One day as Boone was returning to the camp in a blinding snow storm, four Shawnees suddenly confronted him. He dropped his horse's reins and tried to escape, but was captured and taken to Detroit. He was held captive there by Black Fish, Chief of the Shawnees. When spring came, the Indians began to prepare for a trip to Ohio to hunt and to get salt. Boone was taken with them, but when they reached a place near where the city of Chillicothe now is, Boone found out that they intended to cross the Ohio river and attack the Kentucky towns. He made his escape, and ran practically all the 160 miles back to Boonesborough. Then the people in the garrison there prepared for an attack. They were just in time, for soon the Indians arrived. There were about four hundred of them. The siege lasted ten



BOONE'S CAPTURE
THE STOCKADE

THE ARRIVAL OF THE PEACE MESSENGER
CELEBRATING THE VICTORY

days. Then the Indians pretended to give up and go away. That night the men in the garrison heard sounds made by shovels, and they knew that the Indians were digging a tunnel under the fort. But one night a heavy rain came, and the tunnel caved in, and the Indians had to abandon

that plan. In a short time another attack was made. This time the Indians sent a few warriors to the fort, while the rest of them hid in the woods. They hoped Boone and his friends would be enticed out of the fort to pursue the warriors. Boone did just as they wished, and came running out. He was shot in the leg, and the leg was broken. An Indian was just about to kill him when Simon Kenton rushed out of the fort, shot the Indian through the heart, and carried Boone inside the stockade. Soon after that reinforcements came to Boonesborough and the Indians were driven away. This picture shows the attack on Boone at the Fort. This picture shows the men making salt.

Howard L.

After the Revolution, the Treaty of Peace was signed in Paris, but news of the signing did not reach the coast settlements until two months after that, for ships did not travel so fast in those days as they do now. It was one month after that before the news drifted into the Kentucky settlements. In those days they did not have railroads; they did not even have good roads, so news traveled very slowly. One spring day, after the snow was all melted, a messenger came riding into camp with the word "Peace" written on a band on his hat. The people in the stockade all came together, and big bonfires were built. These bonfires celebrated two things- that peace had come again and that there was no longer any barrier between the East and the West. Now that the war was over, and Boone was no longer needed at the Fort, he went back to his former home to find his wife and child. They had returned to the Yadkin River when Boone was taken prisoner to Detroit because they had given him up for dead. This is a picture of the messenger bringing the news of peace. This is a man calling the people together, and here is a bonfire.

Harry B.

This is another picture of the bonfire made to celebrate the coming of peace. After Boone got back to the Yadkin River where his family was, he found that there were a great many Virginians who wanted to go into the Interior behind the mountains, so Daniel Boone led these people over his wilderness road into Kentucky. Among these families was the great grandfather of Lincoln, and that is how this famous family came into Kentucky. After the war had ended, Boone began to grow dissatisfied again, because Kentucky was getting too crowded, so he decided to move west once more. This time he took his family in a boat, and they went down the Ohio River to the Mississippi and from there to the mouth of the Missouri. He lived there until his death, in 1820. So once more Daniel was in a region almost unknown to white people. If it had not been for Daniel Boone, the great west might not have been settled until many years later.

Gordon M.

FREE WORK

The free work of the group is done in the departments of English, art, modeling, handwork, without regard to classification

of subject matter. The academic work is not without classification, chiefly because of the necessity of having special teachers at stated times. But effort on the part of all teachers handling a group to concentrate their work about the central subject, history, tends to destroy lines of classification and to unify the child's experiences.

GEOGRAPHY

Part of the work in geography is an unstressed, purely incidental accompaniment of the history. But since the child must know more of present-day conditions than could be learned through a study of geographic influences in history, a fuller treatment of the subject matter of geography is given. As many of the topics taken up for such special study are approached through history, the essentials of the two subjects are not dissociated in the child's mind.

A complete outline of the course in geography need not be given here, but its historical connections may be noted. The world-knowledge acquired in grade five is here used for a new purpose. Comparison is made of the shorelines and hinterlands of the Atlantic and the Pacific to show why world population moves westward: the Pacific with few rivers, rapid currents, mountainous coasts, a small amount of land open to the sea; the Atlantic with its many long rivers, great plains, ready accessibility, etc. Then the topographic divisions of the United States are taken up in the order in which population filtered into them. This historical approach unifies the subjects, especially as the chief emphasis is placed upon natural conditions which either promoted rapid and prosperous settlements or acted as hindrances to civilization. Natural lines of communication and natural resources are taken up as their presence influenced the movement of peoples.

The expanding of these topics into present-day conditions makes an association in the child's mind between geography and history, causing him at the same time to recognize their bearing upon human life and action.

ART

Besides aiding in the consummation of individual and group projects the art teacher directs the work of illustrating the loose-leaf history notebooks, and decorating covers for them. She accompanies the class on excursions to the Field Museum, the Lincoln Park Zoo, and the Academy of Sciences, to observe beaver, buffalo, wild

turkeys, Virginia deer, and other animals of use to pioneer Americans. The information acquired on these trips finds expression in art, in composition, and in modeling.

This putting of ideas into tangible form clarifies and intensifies them. Children are willing to search books and pictures for the information necessary to make their illustrations accurate in detail and to lend them the proper atmosphere. But the information thus acquired is less useful for further creative purposes than is the emotion aroused when a child paints an historical incident. To illustrate: a child can with more or less effort retain in memory the fact that Washington and Gist, bearing Governor Dinwiddie's message, arrived at the hut of French officers at Venango about dusk of December fourth. But once he has painted the wintry sky, the snowy woods, the log hut in the clearing, and the approaching backwoodsmen, he has an emotional reaction toward that situation that makes it unforgettable. The chief value, however, of such a piece of work lies in its stimulation of the creative impulse, for that seeks satisfaction in further production.

ENGLISH

The examples of oral and written composition previously given indicate the correlation of that subject with the history. There remains to be pointed out the additional value of history in vocabulary building. Since the reading vocabulary of a sixth grade child far exceeds that which he controls for purposes of speaking and writing, a conscious effort is made to enlarge his active vocabulary and to enable him to give his meanings exact expression.

Each child keeps an individual list containing the words he has misspelled, but he also keeps a class list made up of words quite beyond the usual range of the sixth grade child but for which he now has immediate use. This latter list is compiled after certain information has been acquired through readings and class discussions and the entire class is ready to assemble that information in written form.

The teacher suggests a number of words that will make possible an adequate expression of the thought to be written. Dictionaries are called upon to reveal the meanings of those immediately needed words, and their application to the newly acquired subject matter is discussed. Use of the new words is not an absolute requirement, but children soon become aware of the ease given to written com-

position by the use of proper terms and feel pride in the growing power to express themselves effectively.

It occasionally happens that a child with a very limited vocabulary makes no use of the new words. He is then asked to write at the end of his completed composition sentences that will show that he has learned the meanings and use of those terms. It has been found that such practice soon carries over into the composition and helps the hampered child to a greater freedom of expression. Here are sentences chosen at random from a set of papers after the children had collected information and put it into written form. The italicized words are from a list worked out before the writing was attempted.

1. The first white settlers thought the wilderness *impenetrable* because it was so overgrown with *vegetation*.

Virginia.

2. The trails could be easily followed by white men though *originally* they were not blazed.

Alfred.

3. Low lands were avoided because they were made *inaccessible* by rain or heavy snows.

Donald.

4. Some Indian tribes had *permanent* homes of log huts.

Ruth L.

5. To-day no trace can be found of the *nomadic* Indians.

Harry.

6. The tribes that were formed into *confederacies* made the chief trails.

Ruth L.

7. Some of the trails were so *imperceptible* that the white men had them blazed.

Eugene.

LITERATURE

Apart from Cooper's *Last of the Mohicans* and *Deerslayer*, which are on the grade reading shelf, there is not much literature about the pioneer period in America that is especially suited to sixth grade children. There do exist, however, a few poems whose spirit is in keeping with those times and whose study elevates knowledge getting into the realm of the emotional and imaginative. Gould's

Wander Thirst, Kipling's *Explorer*, Whitman's *Oh, Pioneer*, Miller's *Crossing the Plains*, Whittier's *Emigrants* are among those that have afforded the children much pleasure and aroused creative imagination, with such results as appear in the children's poems previously cited.

BIBLIOGRAPHY
BOOKS FOR THE GRADE READING SHELF

— — — — —		
Rivals for America.....	Parkman	Little
Story of the Thirteen Colonies.....	Guerber	Am. Bk. Co.
Daniel Boone and the Wilderness Road.....	Bruce	Macmillan
Daniel Boone	Gulliver	Macmillan
Daniel Boone	Thwaite	Appleton
Pioneer Stories	Blaisdell & Ball	Little
Makers of our History	Faris	Ginn
Stories of Pioneer Life.....	Bass	Heath
Stories of the Great West.....	Roosevelt	Century
Hero Stories from American History.....	Blaisdell	Ginn
Pioneers of the Mississippi Valley.....	McMurry	Macmillan
Heroes of the Middle West.....	Catherwood	Ginn
How Our Grandfathers Lived.....	Hart-Chapman	Macmillan
First Across the Continent.....	Brooks	Scribner
Real Stories from Our History.....	Faris	Ginn
Early Days in Old Oregon.....	Judson	McClurg
Seth of Colorado.....	Otis	Am. Bk. Co.
Benjamin of Ohio.....	Otis	Am. Bk. Co.
Western Frontier Stories, retold from St. Nicholas		Century
Local Histories		

REFERENCE BOOKS FOR TEACHERS

Historic Highways (series).....	Hulburt	Clark
Expansion of the American People.....	Sparks	Scott
From Trail to Railway through the Appalachians	Brigham	Ginn
The Ohio River	Hulburt	Putnam
Geographic Influences in American History	Brigham	Ginn
Trail of Lewis and Clark (2 vols.).....	Wheeler	Putnam
Beyond the Old Frontier.....	Ginnell	Scribner
Passing of the Old West.....	Evarts	Little
Last American Frontier.....	Paxson	Macmillan
In "Chronicles of America" a series by the Yale Press: The Passing of the Frontier, Hough; Our Foreigners, Orr; Adventures of Oregon, Skinner; Conquest of the Old Southwest, Skinner.		

SEVENTH GRADE

THE DEVELOPMENT OF SEA POWER

The history outline given here is a tentative selection and arrangement of subject matter for grade seven. The material does not differ greatly from that which former teachers of the seventh grade have found both suitable for children of that school year, and desirable as a background for the work of the eighth grade. There is, however, a new arrangement which necessitates the omission of certain topics and the expansion of others formerly given in that grade, and the introduction of a few new ones.

The plan was made as here outlined because it seemed advisable to try for a second year with the same group of children the scheme of arrangement used in grade six—the *continuous narrative*. The wide reading of Wells' *Outlines* by the general public proves the value of that form of organization for adults. Such organization would seem then of infinitely greater value to children because to them mere chronology is not an orderly arrangement. It is in the continuous narrative they feel logical sequence. Through it they get a long sweep down the ages that they are unable to get from a treatment of special nations and periods. The result is a feeling of historical unity, a knowledge of inter-relations, and the ability to trace relationships.

It is difficult to choose from the great number of topics that suggest themselves the one that best lends itself to such treatment. After much reading and some experimental planning in which the teacher was guided by the interest of her group in ships and all things nautical, *The Development of Sea Power* was chosen as the thread upon which, "like beads on a chain," all the related facts of history are to be hung. Aside from being one of the most vital considerations in the lives of peoples and nations today, this subject has the additional advantage for historical treatment of a long development from primitive beginnings. It reaches into the hearts of nations, for one cannot understand a nation's place of prominence in the world's trade without some knowledge of the agriculture, manufacturing, inventions, and arts of that nation. In this plan these phases can

be studied, not as isolated developments of individual nations, but as the means by which peoples and nations became dependent upon each other, and as influences that brought about the world relationships of today. It is hoped that a study of the way in which these relationships came about will give pupils a lasting realization of the need for world peace and unity—lasting because based upon knowledge, not upon unsubstantiated sentiment. At least, such a plan gives opportunity for children to see the forging of a chain that grew, link by link, through many ages, binding peoples together and giving them interests and sympathies in common.

As there is no textbook with the plan of treatment above described, the work will be carried on with the grade by means of reference books. Much help can be counted upon from Miss Hall's *Our Ancestors in Europe*, and the grade will be supplied with some mimeographed lessons now in the course of preparation.

I. Beginnings of Trade among Ancient Peoples

- a. Earliest men self-sufficient – Rivers and seas as barriers.
- b. Neolithic culture produces articles for trade: grains, pottery, first tools and weapons, bronze, cloth—Trade routes from Mediterranean up Rhone and Rhine Valleys to North Sea Exchange of amber from Baltic for bronze from Mediterranean—"Dugout" boats and the beginnings of river traffic.

II. Traders and Seafarers of the Mediterranean

- a. Egyptians:
Abundance of raw materials, (flax, cotton, wool, paper, copper, gold and building materials)—Trading posts in the Nile Valley Beginnings of ship building and the use of sails - Stimulation of foreign trade by Neco II—Foreign trade in charge of Greeks living in cities at the mouth of the Nile--Spread of Egyptian arts and industries through commerce.
- b. Phoenicians:
Advantages of geographical position—Calmness of Mediterranean Sea makes oar-arrangement the chief problem of Phoenician boat builders.—The fishing industry trains seamen--Wares of commerce: glass, dye,

copper—Commercial relations established with Egypt—Phoenicians become seekers of tin and amber—Trading connections in Mediterranean lands and in Western Europe and Africa—Sidon opens the eastern Mediterranean countries to commerce—Tyre opens the Western Mediterranean and the Atlantic countries—Phoenicians as merchants and carriers—Bronze workers open trade with oriental cities—Phoenician colonies—Carthage becomes shipping center of Western world.

c. Greeks :

1. Early Greek dread of the sea—Country not so poor as to force trade—Early commerce in hands of Phoenicians.

2. Beginnings of Greek trade—Favorable conditions for shipping—Deficiency of grain and manufactured wares (in early period) stimulates sea going—Lessons from the Phoenicians—Greek ships—Trading connections with Phoenicians—Greek colonization: Industrial and commercial cities in Aegean Islands and Asia Minor; western cities in Italy, Sicily, and Spain—Difficulties of foreign barter cause development of a coinage system—Rise of Athens and Corinth as commercial cities—Athenian control of the sea—Spartan supremacy checks trade—Effects of Alexander's conquests—Rise of great cities: Alexandria, Rhodes—Greece no longer a great commercial power.

d. Romans :

Poor harbor for sea-going ships—Early prosperity due to interior and coasting trade—Conquered and incorporated seaports—Dependent upon outside cities for grain and manufactured goods—Roman roads—Rivalry with Carthage and building of Roman fleet—Rome has a new commercial and industrial development under Augustus: light houses, harbor improvement, world trade—Rome an importing city—Colonial possessions—Decline in trade due to Barbarian invasions.

e. The Feudal System :

Commerce during the period of the Manor—The merchant in early Middle Ages—Distant commerce confined to luxuries—Rise of towns—Merchant guilds—

Development of manufacturers in the towns—The market and its regulation—the Hanseatic League.

f. Revival of Mediterranean Shipping:

Renewal of trade under Italians—Ascendency of Venice during the Crusades—Effects of the Crusades upon knowledge of the East and of eastern products—The compass, maps, paper making and printing—Decline in this trade due to Turks and to new route around Africa.

III. *Explorers and Traders of the Atlantic*

a. Scandinavians:

Northern masters of the Atlantic—Two chief ocean routes: west to Iceland, Greenland and America; south to England and the low countries—Great invasions—Beginning of town life and commerce.

b. Spanish and Portuguese:

Period of discovery—Effects of discoveries on world commerce—Effect of American metals and wares—Rapid development of Spanish industry and commerce—Failure to develop colonial trade—Restriction on trade in colonial products—Portugal and Brazil.

c. The Dutch:

The fishing industry—Free towns—Dutch merchants—Rise of the Antwerp exchange—Trade companies (Dutch West India Co.)—The Dutch monopolize the world's carrying trade.

d. The French:

Advantages of soil and climate—Influences of long feudal period—Trade with immediate neighbors—Disastrous foreign wars—Colonial expansion and immigration—The sugar colonies—Development of land power—French sea power a government project.

e. English:

Sheep industry and cloth manufacture—English trade begins—Development of English navy from fishing population—Trading companies—Colonial policy—Character of English exports—Chief markets for English goods—Sea power a natural outgrowth of trade—England and her maritime rivals:

1. Spain:

English shippers disobey Spanish trade restrictions—Pirates and privateers—England helps Holland—Naval defeat of Spain—Loss of her colonial empire.

2. Netherlands:

Navigation Acts affect Dutch carrying trade—England protects her shipping interests—Commercial struggles between Holland and England—Dutch shipping surpassed by English.

3. France:

France loses her colonies in the Seven Years' War—Revival of French overseas trade under Colbert—Napoleon attempts to re-establish France in North America, India, and Africa—Defeat of the French fleet—Nelson's victory restores England's maritime transportation—Napoleon's continental policy—British control of maritime transportation breaks Napoleon's hold on the continent—England supreme upon the seas—Increase in trade with distant continents—Great naval development due to coal and steel and to inventions.

f. American:

United States as leading world carrier during clipper ship era—Decline in shipping due to the development of the West—Inventions in England centers sea power there—World War shows results of dependence upon foreign carriers—Ship building program in United States and creation of Shipping Board.

IV. *Colonizers and Traders of the Pacific*

a. Germany:

Early agricultural life—Prolonged use of hand power—Raw materials chief exports—Resources of coal and iron—Rapid development of factory system—Disadvantages of geographical location for sea trade—migrations of Germans after Napoleonic wars—Bismarck's colonial policy—The formation of the South Sea Company—Colonization of Africa and Pacific Islands.

b. Japan:

Advantages of insular position—Fishing industry develops a maritime population—"The Open Door"—Japan's transformation from an agricultural to an industrial nation—Japanese overseas trade.

The work of the other grade subjects will be related to the history or will be direct outcomes of that subject. No pre-arranged plan has been made for the art and handwork, as those periods will be given over, in the main, to free, self-initiated pupil-activities. Periods have been reserved for printing, woodwork, and art, and sufficient time has been allowed on the program for the carrying forward of large individual and community projects. Since the subject-matter of the grade has not been radically changed, it is expected that children's interests may cause the special subjects to have an outcome not materially different from that of previous years. Therefore, the outline used in previous years is given here, as it suggests some projects that may arise in connection with the work of the grade and the needs of the school.

Art.—The art work centers around two important activities: press-printing and the making by hand of an illumination on real parchment. All printed gift cards, booklets, etc. are hand decorated, some by free decoration, some by original zinc etchings, hand colored, making an opportunity for creative art work on every impression from the press. Flower, insect, animal forms are studied carefully and applied on smaller pieces of work, in preparation for the parchment work. Much drawing is done in the garden. Some landscape study and simple figure drawing are done also. Careful study of the alphabet forms of all the important types is made. Labeling of school papers and drawings, in single line alphabets, is part of the preparatory drill. The most careful work in design, color and arrangement of texts is done on the parchment, which, because of its beauty and permanency, provides a deep and earnest motive which is intensified by the fact that it is to be a gift to the home.

Handwork.—

Printing.—Printing is the form of handwork chosen for both boys and girls in the seventh grade. It requires just the qualities pupils of this age long to express. It necessitates, as no other activity could, careful attention to form in composition, and because of its great usefulness to the community and the permanency of the printed page, supplies a motive which gives a maximum of organized knowledge and skill with a minimum expenditure of time. The type of work done progresses from simple name lists of grades, used for checking, and small gift cards, to more com-

plicated setting of cover pages, catalogues, programs, and business and banking blanks (used in play business and bank). Later pamphlets or booklets of some literary text or compilation are printed. Color printing, designing and drawing for zinc etchings, simple chalk plate work, and binding are included.



EIGHTH GRADE

ENGLISH HISTORY

The most important principle of teaching is—is it not?—that we should encourage children in a questioning habit of mind; train them not to accept what the book says, what the teacher says, what the newspaper says, what the herd says, but to think for themselves. Now this is peculiarly difficult in history teaching. Even the scholar, using original sources, scans these sources with suspicion, accepts them with grave reservations, recognizes the fact that the contemporary chronicler was limited by his prejudices and his ignorance. And all this suspicion and these reservations, as well as the deductions which the scholar allows himself to draw from these sources, are of course as much the result of the scholar's own prejudices and limitations, as of his trained mind. What defense, then, has the child from his textbook, often many times removed from original sources and a crystallization of traditional prejudice and ignorance? The conscientious teacher, trying to train children in the questioning habit of mind, in skepticism in its literal sense, wonders whether history has a place in the curriculum. We must certainly not accept tradition in education and then invent or adopt reasons for our practice. We must rather steadily question our practice and constantly reject all that is merely the result of prejudice or tradition. Unless we do so, our influence upon education is a pernicious one. Shall we therefore give up teaching history? Why not teach a child to read, and then let him read history if he will? Is it not merely a matter of reading? Can a conscientious teacher teach a textbook subject such as history? Or, if we justify ourselves by the need of feeding the "insatiable desire of the human mind for knowledge," how can we still, while teaching history, train the questioning habit?

One way I find is by beginning with a little elementary economics. I should like, therefore, to sketch a piece of work that I have found is a valuable basis for history study. I shall briefly describe the plan of this economics teaching upon which the teaching of English History is partly based, and point out some of its possibilities.

Teacher. We are going to spend a few lessons on the subject of taxation. The best plan, perhaps, is for each of you to choose a tax that interests you and report upon it to the class, and show us whether it is a good tax. For instance, the French Government once put a tax upon windows. What is the result of such a tax?

Pupil. People build houses without enough windows, and suffer for the want of light and air.

Teacher. The Italians once put a high tax on salt, and if a peasant boiled his polenta in sea water to avoid paying the tax, he was fined for smuggling. Do both these examples show one characteristic of a good tax?

Pupil. They show that a tax should not be laid on necessities.

Teacher. Be sure to make it clear when you report upon your tax whether it is laid upon necessities.

By similar illustrations, the present class worked out a list of characteristics of a good tax. Every child prepared a chart for himself on which he could check all taxes as they were reported.

Good or should not be	Sales Tax	Personal Property Tax	Vehicle Tax	Vehicle License Tax	Inheritance Tax	Income Tax	Tobacco Tax	Alcohol Tax	Customs Tax	Excise Tax	Stamp Tax (not bearing etc.)	Public Utilities Tax	Simple Tax (not in operation)
Necessities	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Payment to Unhappy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Payment to Business	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Productive	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
excessive profits to individuals	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
direct - one that can be shifted	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Expense in Collection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Politics	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
our - favoring one class	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
of Bad Points	2	5	5	0	0	1	2	3	4	8	4	2	3

PUPIL'S CHART OF TAXES

(NOTE: The teacher takes no responsibility for Stanley's conclusions in regard to some of these taxes. He formed his opinion from the children's reports. All the charts differ somewhat.)

Teacher. Sometimes the tax has some other purpose than to raise money. Does any one here own a dog? What tax do you pay on it? What is the purpose of this tax?

Pupil. To decrease the number of dogs in the city.

Teacher. In your report, please inform us whether your tax has any other purpose than the raising of revenue. This dog tax you pay to the city. To whom does your father pay his automobile tax?

Pupil. To the state and the city.

Teacher. To whom does your father pay his income tax?

Pupil. To the United States Government.

Teacher. In your report, please state to what government the tax is to be paid. We must know, also, how the tax is collected, how much revenue it produces, and how expensive it is to collect. We need to know when the tax was first levied. Do you think a tax should be levied according to a man's ability to pay, or according to the benefit he receives from the government?

William. According to his ability to pay.

Jack. I don't think so. That fines a man for industry and intelligence and prudence.

Teacher. How many agree with William? How many agree with Jack?

William. If Jack is right, the people in the poor house should pay the most, because they get the most benefit from the government. (Jack fails to see the fallacy of this argument.)

Teacher. I shall not tell you which I agree with, but we shall need to know when you make your report on which theory the taxing body was proceeding.

Following is a stenographic record of an oral composition on taxation, prepared by a section of the class:

Stanley. One of the most important duties of governments, past and present, is taxation. Taxation is like fire: when used wisely, it is extremely valuable, but when used indiscreetly, it can become equally dangerous. Most governments have realized the importance of fair taxation. Some, however, have overused their levying power, and the result was a strong feeling in the opposition, or even rebellion. An example of the results of unfair taxation is the American Revolution. One of the taxes that caused the war was the Stamp Act. The tax in itself was a fair one, but the way in which it was levied was unfair. The American colonies were taxed without representation in England. Many rebellions have had as one of their main roots unfair taxation. The history of taxation dates back into the days of ancient Egypt, when the Pharaoh, as the result of his right to levy taxes, accumulated immense wealth and power. Every civilization since then has had taxation as one of the functions of its government. In England, when a king had the right to levy

taxes, it was comparatively easy for him to make himself a despot. Ever since the beheading of Charles I, however, when Parliament proved itself to be the master, the king has had more and more difficulty to gain any power whatsoever. Now Parliament controls taxation and all affairs of state, and the king is a figure-head. In America, the people, as represented by Congress, levy taxes. The House of Representatives proposes the taxes. The house has this privilege, because it has a complete change in membership every two years. The new members know what the people want, and act accordingly. There are four kinds of taxes: Those levied by the federal government, the state government, the county government, and the city government. There are two theories of taxation: first, according to the ability to pay; and the second, according to the benefit received from the government. The income tax is operated on the first theory; the single tax, which is not in operation, would operate on the second theory. In America, although unpopular taxes have been passed, there are a few good ones.

Jack. A good tax has many characteristics. During medieval times, the French had a tax on window space. The tax was so high that only the rich could pay it; consequently, the poor could not have light or air in their homes. It seems that the French idea of a tax was on everything that was a necessity among the lower classes. As history shows, this in time led to a terrible revolution. Many wars have been caused by taxes on articles people could not long go without. One of the most important qualities of a good tax is its productiveness. Of course it would be foolish to have a tax on green horses or pink elephants, for who would own one of these? The English have a tax on tea and sugar. Although these are not absolute necessities, most Englishmen drink tea and put sugar in it, so this tax is very productive. Some taxes are a great temptation to dishonesty. The personal property tax is a very poor tax in this sense. If there was a tremendous tax on building, many poor people would be without homes, and many concerns would cease to function. A good tax should not be a stop to improvements. The Navigation Act caused a revolution, and yet it was only a tax, but it was a tremendous discouragement to business.

Then there is the tax that is a profit to individuals. Say that the French have been manufacturing gloves at one dollar a pair. They have been selling them to American dealers for two dollars, who have been selling them for five. A tax of five dollars is now placed on every pair sent to America. The gloves are now being sold for ten. An American concern makes American gloves for three and sells them for nine and the public is paying four dollars more than it did before the tax was levied and paying it to the manufacturer, to enrich him.

Then there is the tax that can be easily shifted. Say that a tax of three cents is put upon every pound of butter made at the concern. This butter has been selling for twenty cents a pound wholesale. The price is now raised to thirty. Retail, the butter has been selling for forty-five cents. It now sells for sixty. A laborer who has been working for one dollar an hour now has his pay raised to two, blaming it on the high cost of living, while if a three cent stamp had been placed on every pound package of butter and the buyer had paid for it, this would not have happened.

Gebhardt. These facts show what a good tax is. A good tax that has all these points is very rarely found, although a good tax is an essential part of government. The stamp tax which requires a stamp on legal documents, seems to me a good tax.

The stamp tax is not on necessities, because legal documents are not necessities. It is not a temptation to dishonesty, because the fee on the tax is so small that it is not worth while to counterfeit it. It is not discouraging to business, because it has nothing to do with the running of a business. It is very productive, and last year brought in seventy-five million dollars. It is not an excessive profit to individuals, because the government and the man who buys stamps are the only people concerned. It is a direct tax and cannot be shifted, because the government is the only person that has anything to do with it. It should not be expensive in collecting, because the stamp is bought by the person who wants it. It is not in politics, because it has nothing to do with politics. It does not favor one class, because everybody who wants to make a document legal has to pay this tax. Every day, ways are being found to dodge bad taxes.

Betty. But dodging bad taxes does not do away with them. The customs tax is a bad tax. It is a tax on exported and imported goods. Germany is the only country that I know of now that has the export tax. The import duties are five kinds; the ad valorem, specific, compound, minimum, and the discriminating. The ad valorem duty is placed on the price or value of the merchandise. The specific is on the quantity, whether the goods come by the yard, pound, or any other unit. Compound duty is a mixture of the specific and ad valorem, and is placed on raw materials and manufactured goods. The minimum I could not find anything about, so I do not imagine it is of any importance. The discriminating duty is a duty in addition to the usual duties, and depends upon which country the goods came from and in what country's ships. This tax is on necessities, but they are trying to put a stop to that. It is a temptation to dishonesty, that is, to smuggling. It is discouraging to foreign business, but very encouraging to American business, for this tax besides the purpose of gaining revenue, is for guarding the home manufacturers. It is an excessive profit to the individual as Jack has explained. This tax can be shifted, for if a large manufacturer wishes to get some goods from a foreign country and he has to pay the customs tax, he can add the tax on to the regular price of the goods and we indirectly pay it. It is very expensive in collecting, for they need experienced men to price the valuable goods which come into this country, and they have to have trustworthy men also. This tax is in politics, because a new party will change the tariff tax. This tax does favor one class, the manufacturers. This tax is very productive, although it is expensive in collection.

Joseph. As has been said before, taxation has continued through the long ages, ever since the Pharaohs of Egypt levied taxes and accumulated great wealth. Government without taxation could not exist. Government without taxation is like a fire without fuel. In order for government to be popular, it must have a fair system of levying taxes. A fair tax must have all the characteristics of a good tax. An exceptional example of good tax is the Stamp Act. Taxation is a tool in the hands of the government; if it is used

with discretion the government will survive and flourish. If it is used unwisely the government will meet with disfavor. No matter how poor or rich a man may be, directly or indirectly he pays a share of the taxes.

This study, I find, helps one to teach history without abandoning the principle that we must train the children to question all things. It will be noted that many of the English history lessons emphasize the influence of taxation upon the development of the Constitution, e.g., 5, 7, 9, 10, 11, 12. Before undertaking English history the class had made a careful study of our constitution and its omissions. The teacher then propounded the query, "Why, after the European war, when so many new states were created, and were adopting their forms of government, did all of them adopt the English so-called parliamentary system rather than our own? Can you see any proofs that our own is a good one?"

Pupil. It has lasted for a hundred and thirty-five years.

Second Pupil. It is very elastic, for it was made for three million people and works well for a hundred five million.

Third Pupil. It was made for a small seaboard country and works for a large one.

Fourth Pupil. It was made for thirteen states and works for forty-eight.

Fifth Pupil. It was made for a country where there were no railroads, no telegraphs, no telephones, no radio, in which agriculture was the chief industry, yet it works for the modern state.

Teacher. Why, then, did the new countries without exception reject it and adopt parliamentary government? We will try to find out.

Following are the lesson sheets given each week to the class with references. The lessons are intended to arouse questions in the children's minds and help them to the answers; to keep in their minds the economic basis of government; and to bring them back finally to the original question, "Were the new European states right in preferring parliamentary to presidential government?"

The children took a test each week on the week's lesson. Then we had a careful oral review, intended to throw more light on the whole subject. Then there was a second test for those who failed in the first. The tests are omitted, with the exception of the first.

LESSON 1—MEDIEVAL LIFE

Could you be satisfied with your life if you had no leisure? Could you, if you neither saw nor heard anything beautiful?

Could you, if you produced nothing useful? Could you, if you were not improving? Could you, if you had no society?

What is a good life?

In the Middle Ages, nearly every man belonged to one of four classes: He was a serf, a guildsman, a knight, or a churchman. Which of these led the best life?

Read *Our Ancestors in Europe*, pp. 213-258, 263-316.

Help make monastery in paper.

Study model of castle.

TEST I

1. What is a good life? Which class in the middle ages led the best life? Write a paper to prove it.

2. Draw a plan of a manor.

What are the disadvantages of this form of agriculture?

TEST Ib

(For those who failed first test)

1. Under what conditions could you be satisfied with your life?

Show which of these conditions the serf had; the noble; the guildsman; the churchman; thus:

Condition	Serf	Knight	Churchman	Guildsman
Improvement of mind				
Proper food				
Etc.				

2. Write, in the first person, a medieval man's praise of his own life.

LESSON II - PEASANT REVOLT

Did the Peasant Revolt fail? Seven thousand men perished on the gallows. Parliament declared the king's pardons null and void. They said that their serfs were their goods, and the king could not take their goods from them without their consent. "And this consent," they added, "we have never given, and never will give to our dying day."

Nevertheless, the aim of the revolt was secured. Serfage was henceforth "on the road to ultimate extinction." A century and a half later it had become very rare.

Read *Our Ancestors in Europe*, pp. 258-263.

Note: This lesson and test were given after *Our BFB* by Florence Converse, had been read to the class.

LESSON III—CHARTERS OF LIBERTY

Why do Americans study English History?

The framers of the Constitution got many ideas of man's equality and brotherhood from French philosophers. Their ideas of political rights they got from English History.

Read: Declaration of Independence, first two sentences and last sentence.

Learn: Charters of English Liberty.

On July 4, 1776, the American Colonies declared themselves independent of England. They asserted that the English government had exercised tyrannical power over them; that it had attempted to over-ride certain rights to which all Englishmen were entitled; that these rights were to be found in certain historical documents, which, in both England and America, had been revered as Charters of English Liberty.

These documents were:

Magna Charta, 1215.

Petition of Rights, 1628.

Habeas Corpus Act, 1679.

Bill of Rights, 1689.

English common law.

LESSON IV—MAGNA CHARTA

In 1215 the nobles tried to take power from an unjust king, and succeeded. In 1381 Wat Tyler and sixty thousand peasants tried to take power from the unjust nobles, and failed. What remedy for injustice did England finally work out?

Begin a chart, showing the growth of the Power of Parliament.

Read *Our Ancestors in Europe*, pp. 205-212.

Learn the sentences quoted, p. 210.

"One copy (of the great charter) may still be seen in the British Museum, injured by age and fire, but with the royal seal still hanging from the brown, shriveled parchment. It is impossible to gaze without reverence on the earliest monument of English Freedom, which we can see with our own eyes and touch with our own hands, the Great Charter which, from age to age, men have looked back to as the groundwork of English liberty."

LESSON V—POWER OF PARLIAMENT

Study these events and add them to your chart:

1265—Parliament of Simon de Montfort, Cheyney, par. 178 & 182.

1295—The First Perfect Parliament, Ibid. par. 183.

1297—Confirmation of the Charters, Ibid. par. 186.

1327—Deposition of Edward II, Ibid. par. 195.

1332—Separation of Parliament into two houses, *English History for Americans*, pp. 69-71.

Why did Simon de Montfort call knights and burgesses (townsmen) to his parliament? To get money to aid in his war against the king. Why did Edward I do the same thing on a larger scale? To get money for his war against France. Why did Edward I confirm two charters? To get money for his wars in France and Scotland.

So the fight of parliament for power has been won by means of taxation.

There are two ways in which a king may regain the power his ancestors have lost. First, he may avoid war, which is expensive. Secondly, he may devise ways of getting money without calling Parliament.*

2. Hand in your chart.

LESSON VI—POWER OF PARLIAMENT

Study these events and add them to your chart:

1399—Deposition of Richard II. *Cheyney*, par. 229.

The House of Lancaster and Parliament. Ibid. Par. 231.

The triumph of the House of York in the War of Roses. Ibid. par. 235-237.

Who succeeded Richard II, when he was deposed? Who succeeded Edward II, when he was deposed? (Ibid. par. 195 and 196). Compare the right of Henry IV to the throne after Richard was deposed, with the right of Edward III after the deposition of his father. Does not the fact that Parliament itself chose Richard's successor indicate a great advance in power?

*Note: The Parliament of 1265 was really illegal, because only the king could legally call Parliament, and because Simon called members only from districts friendly to him.

Parliament reached great heights under Henry IV and Henry V. Why? See Green *History of English People*, I, pp. 522-523; *Cheyney*, par. 231, *Green's Short History*, p. 265.

The line on your chart should go lower at the triumph of the House of York than it was even before Magna Charta. Why? *Green's Short History*, pp. 289-290.

There is no period in English history from which one turns in such weariness and disgust as from the War of the Roses. Why? *Cheyney*, par. 240. *Green's Short History*, p. 288-9.

LESSON VII—THE TUDOR DESPOTISM

Despotism is government characterized by arbitrary taxation; arbitrary legislation, and arbitrary imprisonment. Find examples of each of these things in the reigns of Edward IV and Henry VIII. Examples are bills of attainder, forced loans, benevolences, Court of Star Chamber, spy system, reformation, corruption of Parliament. "The House of Commons was crowded with members directly or indirectly nominated by the royal council." Look up all these matters.

Add Tudor Despotism to your chart.

How can a king make himself a despot? (See Lesson V.)

How did bills of attainder bring wealth to Edward IV and Henry VIII? Henry suppressed 376 small monasteries and 64 large ones, and confiscated from them one-fifteenth of the land of all England. How did this act aid him in establishing despotism?

Why did the Houses of York and Tudor avoid war? (See Lesson V.)

Read: *English History for Americans*, pp. 96-122; *Green's Short History*, p. 293.

LESSON VIII—AGE OF ELIZABETH, 1558-1603.

During this great age a man might gain eminence in many ways — as statesman, soldier, buccaneer, poet, essayist, historian, explorer, courtier, scholar, actor, philosopher, playwright.

Study the life of a famous person of this age, and report it to the class, showing in which of these ways he attained eminence.

Read *Cheyney* Chap. XIII.

LESSON IX—A NEW ROYAL HOUSE

A royal house can maintain a despotism under certain conditions :

1. As long as there is mutual understanding and sympathy between the rulers and their people.
2. As long as there is no strong class which loves liberty to oppose the ruler.
3. As long as the people are exhausted and impoverished by war.
4. As long as there is no unprecedented need for money, e.g., war, greater demands upon government.

Read *Cheyney*, pp. 383-390, 393-396, 400-403, 406-410.

Consider carefully which of these conditions were lacking to the Stuarts.

Add the Great Protestation to your chart.

LESSON X—CHARLES I

Read *Cheyney*, pp. 410-427.

Study this lesson, keeping in mind the ways in which a royal house may maintain a despotism.

What conditions were lacking in the reign of Charles?

What were his acts of despotism?

Make two cartoons showing the attitude of one of the following toward Charles I at any time between his accession to the throne and 1639. (Or show Charles' attitude towards one of them.)

Mention the particular event which has caused the attitude you show :

1. A parliamentarian
2. A Scotch Presbyterian
3. The Spaniards
4. The King of France
5. Sir John Eliot
6. Sir John Eliot's family
7. Buckingham
8. Wentworth
9. Hampden
10. A Lawyer
11. Laud
12. A French Huguenot

13. A Puritan
14. A Sheriff of a County
15. An Owner of Land worth 40 Pounds a Year
16. One of the Common People in a Seaport Town.

LESSON XI—CIVIL WAR

Read *Cheyney*, pp. 431-464.

Add to your chart :

1. Charles's Eleven Years' personal rule.
2. The Long Parliament.

Certain acts of the Long Parliament were against arbitrary taxation; some were against arbitrary legislation; some were against arbitrary imprisonment. What were they?

When Oliver Cromwell himself established a despotism, why did it fail?

LESSON XII—REIGN OF CHARLES II

If Charles I had had a standing army and a means of getting money without calling parliament, he could have established a strong despotism, like that of the queen's grandfather, and her brother, Louis XIII and XIV of France. His son had both these advantages. (How did he get them?) Why then does the power of Parliament steadily rise during his reign?

Read *Cheyney*, pages 416-417, 420-422, 427-428, 431-434, 436, 439, 490-497.

LESSON XIII—BILL OF RIGHTS

Read *Cheyney*, p. 498 to 514.

Add the Bill of Rights to your chart.

Study its provisions, and show what act of the Stuart kings caused each one.

Look up the dates of settlement of the thirteen colonies. Why did Americans believe so strongly in political freedom?

Study the first eight amendments to the American Constitution. See which of the ideas are embodied in any of the Charters of English Liberty.

LESSON XIV—NEED OF REFORM

After the Bill of Rights was passed, Parliament ruled England, but this does not mean that the people of England ruled the country, because Parliament did not represent the people. This is shown in many ways:

1. Few men could vote, and no women.
2. Members of Parliament were not paid, so that only rich men could sit in Parliament.
3. The House of Lords had a veto upon legislation, although membership in that house was hereditary.
4. The king had a veto upon legislation.
5. There were rotten boroughs, from which members were "elected" to Parliament, and large towns which were not represented.
6. Although there were two parties, the king could choose anyone he liked for Prime Minister.
7. It had not become an established custom for the Cabinet to resign if Parliament voted against a bill it had presented.
8. So few people had a right to vote that bribery was common.
9. The people in general had no way of influencing legislation.
10. Parliament could hold office for seven years.

Begin a chart on which you can show when and how these disabilities were removed from 1700 to 1914.

England was engaged in great wars during most of the time from 1689 to 1813.

1. War with France 1689-1697 (called in America, King William's War).
2. War of the Spanish Succession 1701-1713 (called in America, Queen Anne's War).
3. Seven Years' War 1756-1763 (called in America, French and Indian War).
4. American Revolution 1775-1783.
5. French Revolution and Napoleonic Wars 1789-1813.

When a people is making immense efforts to win a war, is not free government more likely to be retarded than advanced? However, see *Cheyney*, pages 526, 540 (foot and top), 541, 547, 548, paragraph 493.

Study pages 583-593.

LESSON XV THE INDUSTRIAL REVOLUTION

Study an invention of the period between 1730 and 1840, and give a report on it to the class, telling how the industry was

carried on before the invention, just what the invention was, and how it changed the industry and affected the laborers.

Read *Chcyncey*, pages 578, 597-599.

In the last part of the 18th century a great change in the ways of producing goods occurred, which is known as the industrial revolution and which was due to the invention of machinery and the application of steam power to machinery. This "industrial revolution" changed entirely the social and political history of England, and it is necessary to study it if we are to understand the 19th century in England.

In medieval times ownership of land by a very few men resulted in giving the owners large powers over the lives of those who needed to use their land to live. When feudalism was at its height, in what ways were the serfs dependent on their lords?

Under the factory system machines for producing the necessities of life were so expensive that only a few people could own them. What were the disadvantages of this system to the laborers? Compare these with the disadvantages of the laborer under the feudal system.

"The immediate effect of the industrial revolution upon the countries to which it came, was to cause a vast, distressful shifting and stirring of the mute, uneducated, leaderless, and now more and more propertyless common population. The small cultivators and peasants, ruined and dislodged by the Enclosure Acts, drifted towards the new manufacturing regions, and there they joined the families of the impoverished and degraded craftsmen in the factories. Great towns of squalid houses came into existence. Nobody seems to have noted clearly what was going on at the time..... Ugly great factories grew up, built as cheaply as possible, to hold as many machines and workers as possible. Around them gathered the streets of workers' homes, built at the cheapest rate, without space, without privacy, barely decent and let at the utmost rent that could be exacted. These new industrial centers were at first without schools, without churches....."

Why does the use of steam power mark the close of the middle period of Civilization?

**LIST OF ORAL REPORTS MADE FOR LESSON ON
INDUSTRIAL REVOLUTION**

(See Test XV)

1. Clothmaking before 1740.
2. Kay's flying shuttle, 1733.
3. Paul's wool-carding machine, 1748.
4. The spinning jenny, 1764.
5. Arkwright's spinning roller, 1769.
6. Crompton's mule, 1779.
7. Power loom 1785.
8. Application of water power to spinning.
9. Cotton gin.
10. Cartwright's wool-combing machine.
11. Results of factory spinning to laborers.
12. Advantages to employes of factories.
13. Struggle between handloom and factory weavers.
14. Attitude of workers to machinery.
15. Rural conditions in England at beginning of 18th Century.
16. Enclosures as a remedy for evils of agricultural system.
17. Effect of decay of domestic manufacturers on country districts.
18. Iron and coal.
19. Influence of the use of water power on the distribution of factories and manufacturing towns.
20. Watt's and Boulton's steam engine.
21. Comparison of steam and water power.
22. Canals.
23. Roads. Work of Macadam.
24. Steam navigation.
25. Railroads.
26. Factory system.
27. Social conditions at the beginning of the 19th century as a result of the industrial revolution.
28. The laissez-faire policy.

LESSON XVI—REFORM

At least ten great reforms in government were evidently needed when the Bill of Rights was passed. Almost none of them were made until 1832, partly because of England's five great wars. Show on your chart when these reforms were made. (References are to *Cheyney*.)

1. Few men could vote, and no women, par. 540, pp. 627-628, 659, 663, 739.

2. Members of Parliament were not paid, so that only rich men could sit in Parliament, p. 695.

3. The House of Lords had a veto upon legislation, although membership in that House was hereditary, pp. 541-627, 690-694.

4. The king had a veto upon legislation, p. 540.

5. There were rotten boroughs, from which members were "elected" to Parliament, and large towns were not represented, par. 539-542, p. 627.

6. Although there were two parties, the king could choose any one he liked for Prime Minister, pp. 547, 681.

7. It had not become an established custom for the cabinet to resign if Parliament voted against a bill it had presented, par. 472, p. 664, and note p. 681.

8. So few people had the right to vote that bribery was common.

9. The people in general had no way of influencing legislation, p. 628.

10. Parliament could hold office for seven years, p. 694.

The following paper was written at the end of the term by a boy in last year's class:

PARLIAMENTARY GOVERNMENT

Government is and has been the main factor of all of the leading countries and the guiding influence of all the nations of the world. Many nations have tried different forms of government, but the parliamentary form has been the most successful. As a proof of this, the new countries which have been originated since the World War, have adopted and accepted parliamentary government. Examples of these countries are Poland, Jugoslavia, Czechoslovakia, Lithuania, and many other smaller nations.

Of course English government is backed by nearly 1,000 years of experience, while American government has had comparatively little experience. Parliamentary government has had a chance to improve and profit by its experience while presidential government has not. Because parliamentary government is an older institution is probably one reason the new countries have adopted it.

However they have watched the results of both governments and have seen the good and bad points of both.

Many people think that English or parliamentary government is better because their constitution is easier to amend. A bill only has to be passed through Parliament while our government requires two-thirds of Congress and three-fourths of the legislatures of each state.

A great deal of the English government is run by customs which also enables bills to be passed very easily. The only fault with so many customs is that some day an influential person like the prime minister

will disregard these customs and form a despotism. America has one bad custom of the choice of nominees being left in the hands of politicians, of the various parties.

Parliamentary government has both legislative and executive powers in one hand. America has not, which is better in the respect that a man can be a better executive than a legislator.

A very marked advantage of parliamentary government over ours is the fact that they cannot have a deadlock. This is because the Prime Minister resigns if a bill which he presents is not passed by Parliament. The presence of so many parties is also a warrant against deadlocks.

The American government works by a check and balance system but deadlocks are frequent. If the President and House are Republican and the Senate is Democratic, the House will pass no bill the Senate presents, the Senate will pass nothing the House presents. The President vetoes everything the Senate presents. Parliamentary government has a much better check in the House of Lords. Although the House of Lords has no real veto power, its refusal to pass a bill three times makes the people think and a reform may be introduced. At least this check eliminates all deadlocks.

Representation seems to have been worked out better in England than in America because they have representation by population. We have two Senators from every state, no matter if some states have ten times as many people.

The English system of government is understood by its people. American government is so much in the hands of politics that the people do not have nearly so much control nor as much interest, nor understanding.

At the change of every administration in America people are made jobless. In England this is not half so common.

Because of the supremacy of the House of Commons the will of the people can be more easily brought to bear on the government. As the people can thus gain more control it is probable that this is the reason for parliamentary government being adopted.

Maybe one of the greatest reasons for parliamentary government being preferred is that the head of the nation, the king, is a mere figure-head. The President of the United States is a king and prime minister in one. This gives him immense power. However, his term in office is fixed and if he does not please his party another man probably from the opposite party will be elected. This revolutionizes the country and keeps it in constant turmoil.

The main reason that comes from a result of all this reasoning and that which the nations had in mind when accepting parliamentary government was that it is a more complete democracy.

Joseph F.

Note. The history in this grade varies somewhat from year to year, as the children's interests and abilities vary, and as

the demands made by current events vary. Three divisions, however, are fairly constant:

A. The Life of Lincoln. This involves the study of American history from 1787 to 1865, with special emphasis upon the slavery question and the framing of the constitution, and somewhat less emphasis upon the civil service.

B. The Origin of the Earth, The First Appearance of Life, The First Appearance of Man on the Earth, Prehistoric Man, The Stages of Culture, and an ancient civilization (generally Rome).

C. The Growth of the English Constitution from Magna Charta to the Present Time.

The work in the social sciences apart from history varies still more than the history. It generally includes, however, a study of taxation, the problems of immigration, the history and government of Chicago, study of the American constitution, and comparison with the English constitution. I have already, in Vol. VI of the *Studies in Education* written at some length on the study of the Life of Lincoln, endeavoring to illustrate by examples of children's work certain aids to teaching. These were in particular a flexible curriculum, which allows the teacher to vary her work from year to year, and which predicates freedom from a textbook; a flexible program which permits the class to begin the day with the things which seem most pressing; and especially freedom from departmental work, so that the teacher can intensify the meaning of her subject through literature, oral expression, written expression, drawing, history, geography—in short through every form of expression and every avenue of impression. I have not therefore spoken again of these matters in this place, nor of our work in American history; nor have I written about Section B, the importance of which Mr. Wells and Mr. Van Loon have insisted upon so convincingly. This study of the coming of man upon the earth and of prehistoric man comes as a part of our science teaching. It occupies comparatively little time, but it seems essential as a foundation for thinking about history. Such a lesson as the one which follows, together with a chart of the estimated length of geologic ages, helps children to the right perspective.

STAGES OF CULTURE

The earliest man of whom traces have yet been discovered, lived perhaps 500,000 years ago. During those 500,000 years, certain inventions and discoveries have been of such importance as to mark the beginnings of new eras. We divide the existence of mankind on earth into three great periods: Savagery, Barbarism, and Civilization. We divide each of these into three stages: Lower, Middle, and Upper. The transition from each stage to the stage beyond is determined by some great invention or discovery. Study each one, and decide why it is of prime importance.

Periods	Subdivision	Ended by	
SAVAGERY	Lower	Use of fire	
	Middle	Invention of Bow and Arrow	
	Upper	Invention of Pottery	
BARBARISM	Lower	Domestication of Animals	
	Middle	Smelting of Iron	
	Upper	Writing	
CIVILIZATION	Lower	Gunpowder	Paper
	Middle	Printing	Mariner's Compass
	Upper	Steam	

Write a paper showing that each of these inventions or discoveries was of prime importance.



HISTORY IN THE HIGH SCHOOL

The course in history in the high school is a survey of the progress of mankind from the days of ancient Egypt and Babylonia to the United States of the twentieth century. It provides historical study for each of the four grades and follows historical order: Ancient History in the ninth grade, Medieval in the tenth, Modern Europe in the eleventh, American in the Twelfth.

The plan is, not to attempt a minutely detailed study, but to help the pupil to gain a sympathetic understanding of certain significant periods in the development of mankind. And as the study of a period is always richer through a knowledge of its literature and art, there has been some correlation of these subjects with history. There are besides numberless ramifications into the fields of economics, civics, and general sociology, but owing to college entrance requirements, more time must be spent on details and memory drills than appears useful or educational. Moreover, since these requirements call for only one unit of history, not all the pupils go through the entire course. As in so many other affairs, it is a condition not a theory, that determines the carrying out of the formulated plan.

The study of history is important enough to lead to the expectation that it will in time be placed in the same rank as the study of English, which runs through the entire high school course of every pupil. Recent events have emphasized, unprecedentedly, the oneness of mankind in fundamental interests; and, apparently, if we are to escape another calamity like the World War we must clarify the minds of men by vital instruction in the meaning of civilization. That is the task of the schools, for the minds of the young are susceptible as they cannot be in later life to education in toleration, right thinking, broad humanitarianism. For the cultivation of such mental and moral character the proper study of history is perhaps the most direct and effectual means. If the history of mankind is a continual struggle between education and catastrophe, education must have a genuine moral basis. No one who reads the history of the race thoughtfully and with candid mind can fail to see in it clear indications of the folly of injustice, of selfish ambition, of national haughtiness, of racial animosity; and he can hardly fail to

see, also, that owing to the universality of printing and the almost instantaneous communication of knowledge, the rapidity of transportation and the financial and industrial interdependence of mankind, we are all "bound together in the bundle of life" as never before. It is the function of history-study in the schools to make this doctrine a vital fact in the mental and moral attitude of youth.

The history curriculum of the high school is as follows:

NINTH GRADE:

Ancient time to 800 A. D.

TENTH GRADE:

European—800 to 1789, or to 1814

ELEVENTH GRADE:

European—nineteenth century

TWELFTH GRADE:

American History

ANCIENT HISTORY IN THE NINTH GRADE

Perusal of the Social Science Course, with its emphasis upon history in the elementary grades, reveals the fact that a normal pupil should come to the high school with a rich fund of historical imagery. Through these experiences and the sharing of labor which they have necessitated, the children completing the elementary school course have had opportunity to realize something of the effects of environment upon mankind; to see to what extent community life is essential in the development of civilization; to become to some extent familiar with the economic problems of life and learn the value of the division of labor; and to get some view of the simpler problems confronting society today.

The relation between the historical subjects for the different grades is of a most general character. Each is chosen for the variety of human experience it may bring to the attention of the pupil; also for its suitability in connection with the child's age and its possibilities in arousing certain reactions. For the lower grades it has been found that chronology makes little appeal to children, for they naturally group their ideas about a vivid personal experience, about a great person, a great achievement, or a great event. In the early adolescent period the center of interest usually shifts, and the pupil begins to give attention to the relationship of events and

to tracing cause and effect in a more logical manner. Because of his interest, and because it seems the best possible foundation upon which to base all future study, Ancient History is given in the ninth grade.

The course for the year's work traces the career of man from prehistoric time through the oriental nations, through Greece and Rome, to the rule of Charlemagne, 800 A. D. In this course the chief idea is to give a coherent, comprehensive picture of the past, to create a perception of historical perspective, and, through the analysis of events, to stimulate the student's aim and desire for justice and right.

From my own experience I believe that ninth grade pupils can gain more by studying in chronological order the history of the nations mentioned than by any other method. They see from day to day how the arts, industries, religious beliefs, and philosophical theories grew; how each age influenced the successive civilizations, and how different peoples improved what they borrowed, or themselves made distinct and original contributions to progress. In the study of these various periods and their many changes, the student—however vaguely it may be—senses the marvels of life. He sees man blindly working out questions of faith, freedom, industry, art, and education; he begins to look at religion, government, and institutions as living issues that grow and develop as we do. With knowledge he acquires faith in the corner stones on which all civilization rests.

How deep seated is the instinct thus to link our lives with those of times long past, how valuable the possession of accurate knowledge in the gratification of that instinct, needs no proof. A single illustration suffices. No greater interest has been manifested by the public in any recent event than in the Egyptian discoveries in the "Valley of the Kings." While even the uninitiated are in a position through the newspapers and magazines to marvel and appreciate our debt to the past in the works unearthed, how much greater is the appreciation of those who have studied the history of the races of mankind and who have been trained in historical perspective! In connection with the reports of the finding of King Tutankhamen's tomb such headlines as "Robbers of the 14th Century B. C. May Have Preceded the Egyptologists" or "Abraham's Birthplace to be Excavated," deeply stir the imagination and especially appeal to those readers who have studied Ancient History.

While the study of history unquestionably thus vivifies the past and deepens one's interest in and insight into the present, it should also assist in the cultivation of the beautiful in life; it should not only provide direct acquaintance with those who have played prominent parts in past ages; but it should -and, when properly directed, it does -create a desire to form and to struggle toward such ideals as those which ruled their lives. Oftentimes we find that new ideas spring into being as the pupil in his historical reading and class discussions compares the lives and principles of the great men of the time he is studying. For example, the student may be studying the characters of Aristides and Themistocles, contemporaries engaged in the struggle for power in administering the affairs of a great state. For the pupil to prefer a man like Aristides, -whose devotion to his country is proverbial, -to Themistocles, and at the same time to recognize the great services of the latter to his country, is no small step in the creation of a standard and of an ideal.

To realize how public opinion can be swayed by a faithless Alcibiades, how the unselfish devotion of a Hannibal may meet with only the basest ingratitude from his fellow countrymen, how a world conqueror like Alexander implanted a high civilization among his subject peoples, are discoveries in those puzzling contradictions of human nature that will be of service later on. All this does not constitute a mere discovery of some of the many puzzling contradictions of human nature; it further tends to the building of honest and unselfish ideals of service; it is one of the first and longest steps toward recognizing the fact that each of us has opportunity so to play his part that the world will be the better for our having lived. The people of each age must accept responsibility for the conditions under which they consent to live, and only as a consciousness of that responsibility is realized will pupils begin to see how their own lives count, not only in their generation, but in the generations yet to come.

In this course of Ancient History, the classes for which are held four times a week, one can realize the possibilities for development from the following outline of the year's work:

ORIENTAL NATIONS:

Arts, Industries, Government, Religious Beliefs, Sciences,
Extant Remains.

GREEK HISTORY:

Physiography and effects.—Geographical and political divisions of Greece; differences in culture among the Greek states; weakness of Greek political system; Greek colonization.

Persian Wars.—Effect upon art, politics, commerce, industry of the Periclean age; Piræus and the rebuilding of Athens; readings from Herodotus.

Age of Pericles.—(a) Oratory—relation of oratory to the public assembly; history of governmental change in Athens; Delian Confederacy and material prosperity of Athens; reading of Pericles' Funeral Oration. (b) Education—Plato and Socrates, and reading of *Apology*, *Crito*, *Phædo*; gymnastic training; symposium. (c) Drama—reading of Euripides' *Alceste*, Sophocles' *Antigone*, Aeschylus' *Oresteia*; Greek manner of presenting a play; popular influence of the theatre. (d) Sculpture and architecture—the festival as a stimulus to art (*Panathenæa* as an illustration); principal phases of religion and worship; study of Acropolis, Academy, Agora, Ceramicus; study of statues as objects of art and reflections of popular customs; visits to Art Institute.

Peloponnesian War.—The Spartan, Theban, and Macedonian supremacies to the conquest by Rome.

ROMAN HISTORY:

Emphasis is placed upon the following general topics: Study of the development of republican government; comparison of Roman representative government with that of Greece and the United States; social, economic and political causes of the Revolution; necessity for the establishment of monarchical government; Augustan age; Roman art and literature; architectural and other municipal enterprises; relation of the empire to the provinces; influence of Roman thought, law, and methods of administration on modern nations.

One of the textbooks, Professor Breasted's *Ancient Times—A History of the Early World*, abounds in pictorial representations of monuments and records found in the East, in Europe, and in Northern Africa. These daily become of greater interest to the pupil when he realizes that the originals of these pictures are most important sources of our knowledge and that these copies provide

proof that he is reading facts and not fiction. To help in impressing the full import of these valuable illustrations the classes are asked, on the completion of a given period of history, to make out a table showing the salient facts in connection with the subject.

The following is an example of such a table:

EGYPT 3000-2500 B. C.		
Extant Remains	Found	Now In
(1) Alabaster jar bearing name and year -- "Year of Fighting and Smiting the Northland."		Philadelphia Museum
(2) Bronze statuette of Imhotep, earli- est architect of Stone Buildings, 3000 B. C.	Near Gizeh	Berlin Museum
(3) Sea-going vessel, 2800 B. C., carved on temple wall	At Gizeh	Gizeh
(4) Many colored glass bottles and vases. etc., etc.	In tombs near Gizeh	Different muse- ums in Europe and America

AEGEAN CIVILIZATION 3000-2500 B. C.		
Extant Remains	Found	Now In
(1) Vaphio cups.	Sparta	
(2) Ivory and gold statuettes of Cretan Lady	Crete	Boston Museum
(3) Drain-pipes from palace at Cnossus etc., etc.	Crete	

Most of these historical objects have been taken over by different governments. They are in the great museums accessible to all. By the end of the year the pupil has gained a little knowledge of the historical contents of many of the great museums of the world. Furthermore, his interest in the arts has been greatly stimulated, and he usually acquires a lively desire to visit not only the scenes of great historical happenings but the places that house the relics of them.

Locally the pupils are able to visit the Field Museum and the Art Institute, where study of wonderful exhibits familiarizes them with original monuments, or their reproductions. They learn practically what an important part the modern museum plays in improving the knowledge, educating the taste, and satisfying the esthetic sense of the people.

Study of the extant remains also arouses the pupil's interest in the written documents of the different periods, and it is not difficult to instil admiration and appreciation of the work of the discoverers. The pupils are quick to recognize the debt we owe to the scholars who, by translation of the papyri, the clay tablets, and other original documents yearly discovered in the Mediterranean countries and the East, are making adequate and authentic our knowledge of man's history from the pre-historic age through the great civilizations of Greece and Rome.

When the pupil holds in his hands an actual clay tablet dug up in Babylon itself—and realizes that it tells a tale that is even properly dated, a date which scholars have deciphered as being on or about 2350 B. C.—he begins to appreciate what the world owes to men like Champollion, Sir Henry Rawlinson, Professor Harper, and numerous others who have devoted their lives to archaeology.

In addition to other aids, periodicals, slides and pictures of historical remains motivate the reading of historical narratives: For instance, the picture of the great "Ishtar Gate" erected in the 6th Century, which stood before the palace of Nebuchadnezzar, makes much keener the interest in William Sterns Davis' *Belshazzar*, which contains much accurate historical description of Babylon.

Pictures of the brick chambers of the Colosseum of Rome, in which the Christians were imprisoned before being thrown to the lions, give a sense of reality to the text of *Quo Vadis*, in which it is described. The news of an eruption of Vesuvius may chance to appear in our newspapers the very day on which the class is studying photographs of Pompeii, with its houses, stores, palaces, and temples, and their contents. This gives the very thrill of life to the printed page, and many of the pupils become anxious to lose themselves in the romance of history.

When the pupil begins to see how the world is indebted to the past for its knowledge, he is willing to bow in admiration to the French for their excavations at Delphi; to praise the Germans for their work at Olympia; to honor Champollion for unlocking the Egyptian language; and to hail Sir Henry Rawlinson for deciphering the Behistun Rock and thus restoring the languages of ancient Persia and Babylonia. At some future date he may be prepared to advocate an international understanding for carrying on such works, in order to expand our knowledge of civilization.

In the actual teaching of this course little difficulty has been found in thus linking the past with the present, and the newspapers, the current magazine, the cinema, the play, and the novel are some of the agencies of its accomplishment. By these means attention is focused upon some selected point of time past, and the life of that time is recreated for us.

The following plan indicates the steps taken in developing a topic. Supposing the topic to be The Constitutional Changes in Athens from 750 to 520 B. C., the necessary reading is indicated and the pupils are asked to come to the class prepared to ask questions bearing on the subject. There is then an informal discussion of the questions involved, the problems and the topics upon which more information is desired by any pupil. Where special points are raised, volunteers look up in histories and reference books the topics on which the information is desired. In the classes, wall maps are constantly in use, routes are traced, places located, and the pupils make maps showing the political changes that have taken place in certain countries. While the children's questions are being answered, and newly arisen questions are being discussed and contributions from original sources are being added to the general fund of information, no attempt is made by the teacher to direct toward a certain end or to hold to a particular arrangement. Therefore the final step in the development of a topic is the shaping of the whole into condensed, well organized form. With the help of the teacher the main points or heads of the subject are set forth in orderly arrangement. The burden then falls on the pupil to support these headings, in other words, to write a digest. This method helps in the analysing of the important points, in correlating the material and in memorizing the salient facts.

Periods of history are reviewed and the work culminates either in a written test, a morning exercise, or a theme. The following paper, written by one of the pupils after the class had reviewed the period covering The Last Days of the Roman Republic, 146-31 B. C., illustrates the theme method of rounding out a topic.

WEALTH AND POVERTY DESTROYED THE ROMAN CHARACTER WITHOUT PUTTING ANYTHING BETTER IN ITS PLACE

At the end of the Punic Wars Rome had acquired a great deal of wealth and territory. Rome was not fit for the gigantic task of governing

these enormous tracts of land and the independent people. Her ancient system of the city-kingdom ruling its provinces by appointing governors turned out to be a failure. Rome's provincial system was, perhaps, one of the greatest causes of the downfall of the Republic and the ruination of the Roman character. Governors were appointed to rule each province. For one year this governor ruled as a king with absolute power. Consequently the taxes were usually enormous, for the governor was keen to make a huge fortune in one year. There was no check on the power of these governors. The wealth brought into Rome by the returned governors and other plunderers of the provinces brought about the forming of a new wealthy class. They were eager to show off, and extravagantly lavished money on luxuries, making the poorer classes dissatisfied. For who would not be jealous if he saw his formerly humble neighbor, returning from some provincial office, erect a magnificent dwelling, with running water, steam heat, two floors, and many, many rooms, while he himself was forced to continue to live in his one-room house with not a single convenience, not even a chimney! The poorer Romans were human and they certainly were jealous.

Slavery was common at this time. It was the practice of nations to make their captives slaves. Ordinarily this would not seem so infuriatingly cruel, but can you imagine a former small, ignorant clothing merchant, enriched by the increased commerce, having for his slave an educated Greek, possibly one who had studied at Alexandria? This, naturally, seems ridiculous to us, but it actually happened in hundreds of cases.

Land was still the most respectable form of wealth, and the newly rich were very anxious to acquire it so as to establish their social status. Between them and the old aristocrats the small farms were soon all bought up, and Italy was composed of enormous estates. These estates were worked by slaves, who were treated worse than cattle. This was very serious to the small farmer. In the first place, much of Italy had been devastated by Hannibal. Many men, when they returned from war, could not live in a settled way. These men became professional soldiers. Others found their farms devastated or bought by some noble. The few who returned to the agricultural life were quickly forced to give it up. The price of grain was so low because the nobles could grow it so cheaply with slaves and because so much was imported that after toiling throughout the year the price given for the crop of grain probably was about half of what it had cost the farmer to raise the crop. He would sell his farm and go to Rome and depend on the free bread for his food.

It was wealth which caused all this misery. It was money that made the wealthy so extravagant, and it was the lack of it that made the poor so unhappy. The buying power of the Romans increased as more money came in from the provinces, trade was stimulated, the merchants got rich, and all the nobles bought up the land of Italy. What chance was left for the poor man? He could not become a laborer, for all labor was done by slaves. Is it any wonder that these wretched people, deprived of even work, became desperate? Is it any wonder they became

corrupt? Is it surprising that they longed for some sort of distraction and that they should turn to brutal entertainment? Is there anything strange in the fact that the candidates for office staged gladiatorial combats and other bloody spectacles to win the popularity of the poor masses? Is it peculiar that the office seekers spent entire fortunes bribing the unscrupulous throngs? What is there unusual in the fact that the richest and most powerful succeeded in getting the offices instead of the ablest? Consequently, politics were corrupted. How could ignorant, wretched people, desperate because of no work, be expected to live successfully without even a steadying hand to help them?

Probably you are asking yourself what this had to do with the character of the man. The character of the rich was ruined. People who can have all that money can buy invariably become proud, selfish, oppressive, and unpatriotic. They believe themselves superior to their neighbors and are unwilling to assist them or combine with them for anything. In this manner wealth destroys the character of the wealthy. How did it destroy the character of the poor? A man who is forced to depend on free food for his very life loses all self-respect. If he has no self-respect he will in all probability lose his sense of duty. He will be jealous of the people who have everything they want, and in fact, having lost his sense of duty, he will be jealous enough of them to do anything to get in their position or to revenge his own wrongs. So wealth destroyed the character of the poor. What was put in place of the old honest, brave, patriotic, and unselfish Roman citizen? Nothing.

Now, you are beginning to wonder how culture could destroy good character. Who do you suppose would be the bravest and most loyal in a crisis, a pampered and spoiled child of a wealthy man or a child brought up comfortably but who had always helped himself and thought for himself? I believe that the former would wait for his slave to do the deed or say the word or whatever it might be, and if his slave weren't there, he would surely consider himself superior to the latter and leave the latter to do it. I believe, however, that the latter would unhesitatingly accomplish whatever was necessary even though he had the opportunity of letting someone else do it. The same comparison may be made between the Romans of earlier times and those of the time we are speaking.

The wealthy soon became cultured, that is, as cultured as tutors, beautiful works of art, etc., could make them. When they became cultured they had also become luxury loving, in most cases. For a man who is refined likes his running water, steam heat, drainage, etc. It was culture which made the rich love luxury, and it was luxury which destroyed the character of the rich. The poor need not be spoken of here as they never became cultured. All that refinement meant to them was more luxuries to make life even easier.

This has been a description of how "Wealth and Poverty Destroyed the Old Roman Character Without Putting Anything Better in Its Place." There were, however, some advantages from the increased capital and

higher civilization. Briefly, among these advantages were the increased commerce and business, the founding of banks, a higher education, the beginning of Latin literature and of libraries, the erection of more beautiful buildings and the improvements in architecture, the early attempts of Romans to paint and sculpture, improvements in the homes.

Most of these things, with the exception of a higher degree of civilization, are material. How can material improvements make an age progress when character has been destroyed and high morals completely disappear? Therefore this age is considered one of corruption even though there were material improvements.

Louise M.

In conclusion, what is desired is that students in the Ancient History course shall gain an adequate idea of the beginnings of oriental civilization; and shall be able to trace the thought and character of the Greeks and the Romans and link their art, literature, and science with the present day. They will be expected to appreciate the influence of the older civilization upon later times, and to carry with them through life a rich picture, full of meaning, and a sense of historical continuity.

CORRELATION OF ANCIENT HISTORY AND ART IN THE NINTH GRADE

The Art Department coöperates with the History Department, and a brief statement of some of the topics studied last year under the art teacher follows:

The class in Ancient History spent some time studying the art of Egypt and Greece, taking up the following points:

- I. The Pyramid Age—Egypt:
Great Pyramid interior and decoration.
- II. The Feudal Age—Egypt:
Tombs and temples; obelisks and sculpture.
- III. Ovals—Egypt:
Containing names of Kings and Queens.
- IV. Architecture—Egypt:
Plans—facade—pillars—decoration—statuary.
- V. Architecture—Greece:
Plans—pillars—colonnade—clerestory—statuary—decoration.
- VI. Sculpture and Painting—Egypt:
Proportions and symmetry.
- VII. Sculpture and Painting—Greece:
Proportions and symmetry.

We were led into Dynamic Symmetry in studying Jay Hambidge's book, and found out that the application of proportional areas was one of the reasons why Egyptian and Greek architecture and sculpture reached such perfection.

The pupils studied enough to appreciate this somewhat and to understand that symmetry is the quality in art or craft which makes it good design. They began to realize that the reason the Egyptian and Greek art has always been so vital and well worth studying through all time, is because they built organically, with unity and reserve--three qualities of utmost importance. Static symmetry is more spontaneously used and easier understood. Dynamic symmetry is more consciously used.

In the architecture of our modern cities the children were conscious, even from their own small experience, of a lack of unity and symmetry -the reason for this being that the buildings are planned by several persons, artists in special lines, the engineer and architect being different persons; while in Egypt and Greece the engineer and architect and decorator were the same artist.

The pupils, during the year, used all their handwork time, four forty-minute periods a week, in art study and expression. They were much interested in the correlation of art with their history study. Examples of their work show much appreciation and some knowledge of the outstanding principles in the art of both the Egyptian and Greek civilization.

REFERENCE BOOKS

Dynamic Symmetry	Hambidge	Yale Press
Architecture and Democracy	Bragdon	Alfred Knopf
Where the Great City Stands.....	Ashbee	Essex House Press
		London

MEDIEVAL HISTORY

The course of study in this subject is rather a joyous adventure than a strained pursuit of knowledge. This happens for several reasons, chief of which is the intellectual quality of the classes. Owing to the fact that neither the school nor the colleges require a complete survey of world history, most pupils elect Ancient History and American History, and studiously avoid the long, unilluminated range of the Medieval period and, still more unfortunately, the

vivid and important Modern epoch. A small group, however, is unsatisfied with the piecemeal "course" that contents the majority. Such a group naturally is composed of pupils of more than average mentality and intellectual curiosity. It is an easy and exhilarating job, therefore, that falls to the lot of the teacher; he needs neither lure nor lash in the performance of his work. He has merely to lead or follow, to advise and suggest, to admit ignorance and devote himself afresh to the pursuit of the truth.

A textbook is of course the most direct and practical means of getting into the Past, as well as an almost indispensable guide and friend when the student gets there. (It need hardly be said that Professor Robinson's *Medieval History* is the book of our choice.) But the story as told in the text is merely the highway that leads through the thousand years we have to travel. We come back to the road now and then when we have exhausted the byways; but the joyous adventure is *off* the road rather than on it. Before we have spent a day or two on the textbook we are ready for another plunge into the topics of interest that have opened about us.

It is generally the pupils themselves who propose these topics. Sometimes they receive enthusiastically the teacher's suggestions as to interesting matters for investigation, sometimes they are cold toward them. I never insist—not with groups like these. Sometimes the topics run far afield, so that I can not afterward remember what it was that suggested them. Such a topic, for example, as *heredity*. Once in a while a pupil discovers that he has pursued a subject that is too subtle and elusive for him, and gives it up. That happens rarely, however. More frequently the subject fails to prove as productive of interesting matter as the investigator had expected, though even this does not often occur.

Our main difficulty is over-production. Class periods are too few and too short to dispose of the accumulation of knowledge the pupils bring to class. Another criticism of this sort of work is its lack of depth and thoroughness. When it is recalled, however, that these boys and girls are only fifteen and sixteen years old, the surprise is that they dig as deep as they do. In any case there is no need of their becoming too well-satisfied with their acquisitions; a sensible teacher can always apply the right amount of corrective.

In a class of this kind, formality is never thought of. The relation of teacher and pupils is of easy-going colloquial friendliness.

The pupils themselves have full license of speech, which some of them use with manifest enjoyment in genial banter and derisory criticism of a good-natured sort. In the main, however, the spirit of the class is serious, though not too heavily so. For no teacher, however much he may delight in joyous intellectual adventures, can be much of a teacher if he be not a lover of the knowledge of the truth; and if he be such, his teaching will always be more or less concerned with imparting ways and means of acquiring knowledge and organizing it and communicating it. Even dull pupils will get a glimmer of that spirit, but to the mentally alert it will become a vital part of their education.

The study of Medieval History, then, is with us an attempt at least to live freely in that "curiously" different epoch of the past, to follow the broad highway of events but to digress far and wide from the beaten track as dimly visioned interests lure; to know how the men and women of those times worked and played and fought and loved and worshiped. The dominance of the church, the prevalence of feudalism, the upbuilding of the towns, the evolution of nations, the recovery of spiritual freedom—this is the broad highway. From this run the paths in every direction, and it is along these paths that we have found our main satisfactions.

Before we take up the textbook, the pupils are asked to turn their minds inward to see what they can find there of knowledge of the medieval world which we are about to explore. Usually the result is a somewhat meager assortment of information. By working this over a little, the class begins to get some general notions of the scope of the work before us sufficient to enable them to present on the following day a pictorial scheme of the entire subject, after the manner of some of Mr. Van Loon's whimsical illustrations. It is then the function of the teacher to take the class up on a high mountain (so to speak) and give them a "grand view" of the ground to be covered. He can do this by means of a glowing exposition or by the more prosaic method of opening the textbook to the table of contents. In this way it is possible to make clear the importance of conditions and institutions in the study of the past, and to explain the relative unimportance of most of the events that used to be laid so heavily on pupils' memories.

The approach to the Middle Ages is of course through the crumbling ruins of the Roman Empire. Pupils do not seem to care

to linger here, except to speculate about the causes of the downfall of the once great power and to search for analogies between conditions in Rome and in present day empires. They are content to follow the highway of the textbook all through the Barbarian Invasions. It is when they come to the Church that they begin to show eagerness to wander off the road. They want more detailed information about monasteries and the mode of life of the monks. Mohammedanism exerts a still greater fascination. This year we reached the period of Mohammedan conquest just as the Turks were winning their remarkable victory over the Greeks; and this coincidence inspired the class to give the school the benefit of their study in a Morning Exercise. Like all normal boys and girls of alert mentality, they were fascinated by the speculation of what Europe might have become if the religion of Mohammed had not been stayed in the eighth century when it was sweeping northward through France. Speculation of this sort seems a fruitful exercise of the imagination and the reason, but it must always be kept distinct, in the pupil's mind, as mere guesswork. The most interesting excursion made in connection with Mohammedanism was a study of Moorish architecture with which one of the boys diverted himself. In his report to the class, he made use of books and photographs.

So much for the preliminary period, from 400 to 800. Here we pause for a day to survey the four centuries we have passed, and to look forward across the seven centuries we are to traverse. A review furnishes the opportunity to teach the art of organization of material, to turn a solution into crystals. Pupils bring the results of their attempts to class and submit them to criticism, and it is then that the teacher has the opportunity of showing how it *should* be done—provided he really knows; if not, he can present his own contribution and give the class the fun of discovering defects in it. At this point, too, is another opening for a pictorial representation of the facts; in nearly every class one or more pupils are ingenious and skillful with the pencil, and the result is always stimulating to the rest.

From the "high ground" of Charlemagne's Empire the pupil can discern pretty clearly the road that lies ahead; the centuries of feudalism, the ever increasing power of the Church, the Crusades, the development of the towns and kingdoms and the consequent disintegration of the feudal system, the awakening to new life in

the Renaissance. It is a story saturated with human interest and replete with dramatic situations. Only a pedantic teacher and a class of dullards could quench the spirit of delight in such a tale. All along the way it opens upon alluring vistas of investigation which the class is given full liberty of following. What intelligent boy or girl, for instance, would be content with the brief sketch of the Hospitalers and Templars, or the character and fate of the medieval heretics, or the life in the Italian cities of the Renaissance, Gothic architecture, Medieval universities, and a dozen other matters? In one corner of the blackboard we keep a list, which is being constantly revised, of the subjects the several pupils are investigating—a sort of schedule of excursions. Presently—it may not be for a couple of weeks—we all “get back”; and it is then that we resume the highway and cover another stretch of the road; that is to say, we read another section of the book, and then are off again on our rambles.

This, in a general way, outlines our procedure in the study of Medieval History. It is hardly necessary to say that we are constant in our devotion to maps, and that we try to use all the illustrative material that can be obtained without too much difficulty. We should make more use of the Academy of Arts and the Field Museum than we do, but we lack time, or seem to lack it.

As to notebooks, pupils are advised to “make their own,” which shall contain the products of their investigation as well as the organized knowledge they have obtained. Maps are not required, but no pupil is discouraged from making as many as he wishes. It has always seemed to me that a deal of time is wasted in student cartography; the purpose of maps is to make geography definite, and no intelligent man needs more for this purpose than the *habit* of consulting his atlas. If the pupil gains a broad, intelligent view of the past or any part of it, if he has found genuine interest and pleasure in delving among the ruins of what was once so *living* and has been able to make it live again in his thought, he has done well. If, besides this, he has been able to see, even dimly, that underlying all the differences between those times and his own there is a vital similarity, that the life of mankind continues with no ruptures save those which are external, he will have found a bit of knowledge which is the beginning of wisdom.

MODERN HISTORY

The most recent addition to our curriculum in the Social Science is a course in Modern European History, offered as an elective in the senior year. It would seem that such a course needs little justification as an integral part of any well considered curriculum in the Social Sciences, especially for pupils whose education ends with the High School. We hold that the course in Modern History is of scarcely less importance than that in American History as a preparation for intelligent citizenship. It must be obvious to every thinking man that the destinies of our country are no longer separable from those of Europe and that, whether or not we enter upon any sort of formal compact with the nations of Europe, we are virtually compelled to take a more active part in the settlement of world affairs. Granting this, it appears to be almost imperative that we give students in our high schools a chance to acquire at least a rudimentary knowledge and understanding of the nations of Europe today—their political institutions, characteristics, ideals, and problems.

As the course is in process of being presented for the first time, it seems unprofitable to enter very deeply into the question of method, which is necessarily merely tentative and as yet untested by results. It may be in order, however, to point out certain objectives that are aimed at in the presentation.

Chief among these, in fact the central topic of the course, is the study of the rise of democratic ideas and the reception accorded them in the different states. Other objectives aimed at are:

1. To put the student in touch with world affairs today through a study of the individual nations during the past two centuries.

2. To bring home to the student that it vitally concerns him as a future citizen of a world power to know what the relations of the other nations are with one another and with his own country, and what factors might bring about a change in those relations.

3. To point out some of the tremendous social and economic problems that originated with the universal introduction of machinery and have not yet been solved.

4. To begin to cultivate in the student the habit of detached

judgment, that he may be able to discount partisan praise or blame, and estimate specious propaganda at its true value.

The members of the class taking the course this year had in general a background of two years of history, Ancient and American, only two members having studied Medieval History. It seemed advisable, therefore, to devote the first two weeks to a rapid survey of Europe from the fall of the Roman Empire to the end of the 17th Century. This was done largely through reports on special topics by individual students, the thread of the narrative being supplied by talks connecting the various topics. With this preliminary survey out of the way, a textbook was taken up (Robinson and Beard: *History of Europe—Our Own Times*).

The text usually furnishes only enough material on any given topic to introduce the subject and leave with the reader some unanswered questions. These form the basis of class discussions, or if further information is needed, of collateral readings from various sources. In scope the course covers the period from about 1660 to the present day. The periods or topics particularly emphasized are:

Absolutism in the 18th Century; the Great Powers of Europe, their origin and development.

Conditions of life of the people.

The Intellectual Revolution.

The French Revolution. Beginnings of democracy.

The Napoleonic Era and its results in Europe.

The Industrial Revolution.

Revolutionary movements of the Middle 19th Century. Unification of Italy and of Germany.

The Third Republic in France; its constitution.

Era of political and social reform in England.

Imperialism and expansion, 19th Century.

The Near Eastern question.

The Far Eastern question.

Partition of Africa.

The World War.

The Peace.

The situation today.

AMERICAN HISTORY

In teaching, as in so many other pursuits, it is a condition, not a theory, that confronts us. The size of the class, the mental quality of the pupils, the number and length of the periods, the pressure of other work on the students, these are some of the obstinate facts that oppose themselves to the hopes, desires, and aims of the teacher. He is obliged to let "I should like to" wait upon "I don't see how it can be done." Eventually experience teaches the teacher that it is best to select among all the things he would like to accomplish that course which seems adapted to meet the greatest need of his pupils, or what he conceives to be such. Fortunately, however, most of the pupils, through their study of important phases of American history in the fifth, sixth, and eighth grades, have considerable background. Although their factual knowledge has become dimmed, their appreciative intelligence remains, so that the study of the period of exploration, the colonial period, and the development of slavery is much facilitated. Many considerations have led me to concentrate on what I have come to recognize as the chief need of the pupils, namely, training in intelligent and effective reading of the history textbook. Even high school juniors and seniors do not know how to get the pith of what they read; they do not discriminate between the important and the incidental; their knowledge *sprawls*. If they are to be equipped, therefore, for college work in history and for intelligent acquisition of knowledge later in life, they must learn how to read with their minds as well as with their eyes.

So it comes about that the course in American History is not a "joyous adventure" but rather a plodding march along the beaten road. Every lesson is a lesson in selection and organization, and in accuracy of statement. It would not be correct, however, to infer that our study is merely a dull routine of logical analysis. No visitor to the class would think so, I am sure. For, once the lesson has been dissected, so to speak, the work of vivifying begins—and it continues to the end of the period. In other words, every lesson has its luminous points, its really significant facts, and it is upon these that all the emphasis is placed. It is on such portions of the lesson that the teacher would like to send his pupils in search of

deeper knowledge, and it is just here that the obstinate "conditions" already referred to prevent research.

The subject matter in most recent high school history texts is well organized, so that the pupil has constantly before him a good example of thought logically arranged and presented; and our first business is to study the table of contents, not only in order to comprehend the scope of our study but also to get a glimmer of "first principles" as to method. It will be quite a while, however, before this prefatory gleam becomes bright enough to guide the pupil in his daily study. Except for real students, the process of learning is a slow one.

After this preliminary view, the pupils are usually permitted to decide at what point of the story of American history they will begin. There is no compelling reason, in my judgment, for not taking up the story at the beginning of our life as a nation, or at the War of Independence, especially as most of the class have had elementary school instruction in the colonial period. Generally, the class decides to begin at the first page of the book. Of course, when they decide otherwise, we eventually "make up" the omitted portions of the story.

From the first lesson, the pupil is taught to ask himself, "What is the lesson about?" And to believe that there is a simple, single answer to that question; that it isn't about a lot of things; that the "lot of things" which he finds in the pages he has read are merely contributory to the actual subject of the lesson, just as all the information he finds in the entire textbook is merely facts (or so the author judges them to be) about American History. If the student discovers any subject-matter in the lesson that does not contribute to the one single simple theme, then he has found a defect in the text of his author; for every properly written school book is a piece of organized knowledge, and organized knowledge means knowledge logically arranged. The author frankly reveals his own conception of what he is writing about by the captions he gives the several parts, chapters, sections of the book; but for the sake of picturesqueness or vividness, or some other reason known to himself only, he often uses topical expressions instead of plain statements. Our object is to find definite, unadorned statements, for much vagueness of knowledge can be concealed in metaphors. Now it may seem that this approach to our subject would be fatal to interest in historical

knowledge; but the fact is that it usually generates zest for what follows. That it is of advantage in compelling the student to bring before his mind every part of the lesson is obvious.

When once we have decided what the lesson is about, we set about explaining, clarifying, vivifying the main matter. Sometimes (not often) we are able to clear this up and "get it out of the way" quickly, so that there is time left for minor points of interest. Sometimes the class is put to work writing "the essential facts" about the lesson. The reading of these papers frequently leads to sharp, not to say violent, differences of opinion as to the "essential" nature of the facts. In general, the "method of instruction" is a combination of recitation and open forum, with the forum very much on top. As in the Medieval History classes, reviews (looking backward) and surveys (views ahead) are frequent; and whenever we complete a unit of the story we undergo a written test, which usually reveals to the teacher the defects of his method, and to the pupils the inadequacy of their attainment. It is therefore good discipline for both.

In regard to subject-matter, our purpose is to put into the minds of the pupils a coherent view of the story of our national life without emphasizing any particular aspect, unless it be the political. We do not disregard the industrial or the social developments, nor do we stress them; we leave them for further consideration in the latter part of the year when we study civics. So far at least, it has seemed more useful to the large majority of pupils that they should have a clear picture of the entire course of our history than that they should look at it from half a dozen points of view. They are still pretty young, and most of them will go to college, where they will be likely to gain more intensive knowledge of the different phases of the subject.

The main emphasis of the course is placed on half a dozen or more clearly defined "epochs": The Revolution, its causes, events and results; the "Critical Period," when the fortunes of the Republic were in the balance; the first quarter-century, when the French Revolution and the subsequent wars were a continual menace to the country; the short period of national enthusiasm and harmony that were soon followed by the long struggle over slavery, culminating in the Civil War; the remarkable social, economic, and political revolution in the '30's; the Civil War in its political and economic and

social aspects; and finally the great modern period of industrial expansion that has involved us in new and difficult and unending problems. It is these outstanding features of American progress that make up our year's work.

Our work in Civics has taken varied forms, no one of which has proved satisfactory. The shortness of the time has necessitated prudent picking and choosing among the topics before us. The character of the class also has had somewhat to do with the selection. We have sometimes devoted much of the two months (the average time given to the subject) to the federal constitution. Once we made a study of state and local government. The last two years we have been emphasizing the economic aspect of history. All these matters are useful, even necessary, parts of a high school student's equipment for citizenship, but no one need be told that a far greater allotment of time must be made if the knowledge gained is to sink very deep into the student's mind. The solution of the problem is probably a merging of history and civics and economics into one course of study, but I believe that such a course should be preceded by a rapid, comprehensive view of the entire field, such as can be got only by a somewhat old-fashioned study of a good textbook. In any case, the work cannot be done adequately unless more time is given to the subject.



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CREATIVE EFFORT

Published by the Faculty of The Francis W. Parker School, Chicago

VOLUME VIII

PRICE, FORTY-FIVE CENTS

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DEDICATION

Of the "Record"

It was her power to stimulate in others that thirsting love for humanity from which she drew her urge. She moved through life like an electric force, shocking vague hungers into expression; touching off inward fires till they blazed out in glory. And so we hold her in our memory, vivid and intense.

We see her hailing our group of small, exhausted laggards across the hot dunes. We cry out in weariness and thirst.

"Suck a pebble," she advises relentlessly.

We see her holding us at our work on our club house, amid rain and snow, grandly unmoved by fear of colds or mothers. Nails slip through our numb, bruised fingers, enthusiasm freezes; rebellion flames. But when the shanty is completed and lined with sky blue cambric, we marvel at the work of our hands, remembering past labors with joy and pride. Then she spurs us on to higher effort.

We see her thrilling dead ages into life for stolid youth, whipping drowsy ambition into excitement, faring forth at last to scour the world for better ways of making small souls grow.

And we see her brought up short by death, drifting from the world on the eve of her greatest contribution, bearing with her, in spite of work achieved, an incommunicable treasure of potentialities.

We cannot be reconciled to her loss.

A Picture of a Creative Teacher. It is the dedication of the school annual to the memory of Miss Jennie Hall one year after her death. This dedication was written by an alumnus.

P R E F A C E

This is the eighth "Study in Education" which the faculty of the Francis W. Parker School has published during the last twelve years. Each book has sought to illustrate by concrete examples the value of some particular underlying or controlling principle in our work. This volume centers attention upon the results of children's creative activity. Our generalized discussion of these results we have reserved for the end of the book, believing that it will mean more to the reader after the presentation of the concrete material. There are, however, certain tenets of our creed which may best be stated at the outset.

We presuppose that in varying degrees and with wide individual divergences and tendencies, all normal children possess impulses to create. We do not, therefore, need to justify this output of children's work by its intrinsic worth; certainly no genius has appeared among us, and as certainly we are not at all satisfied with what has been done thus far in our school. We believe, however, that such a survey as this may be useful both to our own teachers and to other teachers because it uncovers and stresses the fact that children of all age, from the youngest ones through the high school, will, when given opportunity, pour forth spontaneously and joyously their imaginings, ideas, and emotions. Though the form of such expression is often crude, we think that it is nevertheless delightful because of its promise, ingenuousness, and originality.

We believe that we see in this accumulation of creative material genuine encouragement for our conviction that it is a prime responsibility of a school to provide for its children both constant stimuli to creative effort through books, people, and environment, and wide opportunity for continuous and satisfying use of their own creative impulses. We believe it shows that genuine, worthwhile responses come abundantly when there are stimulating sit-

uations in a child's environment, where there are experiences which stir his emotion and touch his imagination. For such stimuli teachers must be responsible, and since there is little suggestive data now available, it would seem valuable if each school would share its experience by publishing its most suggestive results.

Recent scientific investigation and research in educational fields has enabled teachers to measure the intelligence of children more accurately, to evaluate school subject matter better, and to test some kinds of school achievement. For such help we must be profoundly grateful; but there is some danger, it seems to me, of swinging too far in this direction, of allowing the mere gathering of data to engross too much of the precious time of children. Moreover, in too many schools both teachers and children seem so concerned in getting control of tools that they have little time to use them constructively or for creative purposes. More than ever we need to keep our vision clear to the value of those elements in life and education which cannot be measured and which give to us all, big and little, the highest aspiration and inspiration, which create in us standards of taste and attitudes toward life which go far in protecting us from ugliness and sordidness in our environment.

We believe that a study of such material as we cite tends to make us realize that creative expression is fundamental to the child's fullest development, to his happiness and his spiritual growth. All normal children have the right to live in a rich environment, to exercise to the full all their powers of expression, and to have every avenue to their souls open and in use. Not everyone can contribute to the permanent beauty of the world, but it is the privilege of every school to create conditions which should arouse each child to express freely in some chosen form his own best ideas, inspirations, and emotions.

Flora J. Cooke

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The photographs in this volume were taken, with a few exceptions,
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"Say," says I, "everybody up at school is talking about Happiness and the reasons thereof. What do you think Happiness is?"

"Dear lad, your question is foolish," said Cousin Ed, who is twenty-three. "There are no set rules for Happiness. Two people can be in the same environment and yet one can be happy and the other perfectly miserable."

"But what does Happiness mean to you?"

"It means absolute comfort, mental, physical. When I have no worries and am seated in the best chair in the house I am happy. To me comfort is Happiness."

"But Noah Webster says——"

"Hang what Noah says! How could he know what Happiness is, when all he did was write down a lot of words and burn the midnight oil? And besides, don't you know nobody had any good ideas before the twentieth century?"

"Now you're trying to joke. I really want your honest opinions. Look here, Noah probably knew more about Happiness than you do, because he achieved something, and to create is Happiness."

"No, lad," said Cousin Ed, "at the moment a man finishes something, his joy is one of Ecstasy just like love is."

"But there isn't anything in common between Love and Creation."

"There isn't anything alike in an elephant and an angle worm, but they're both live stock. To create something worth while, if it's only a horseradish, is a kind of ecstasy."

—Extract from article published in the school "Weekly."

CREATIVE EFFORT—IN WRITING

It was not horseradishes which the cousin of Cousin Ed created. It was chiefly compositions of words. His bit of "seventeen" philosophy may contain the flavor of the unusual, but most of the productions cited in the following pages were written by children who are decidedly "average." And these are the merest fraction of the annual output of children's writing which we may presume to call "creative."

We have arranged the compositions according to the apparent reasons why the children wrote.

I

The first group contains the poetry and prose of children whose imaginations had been stirred by the lives of people remote in history or far away from us on the earth's surface. (The exact nature of the historical backgrounds which had previously been created is described in *Studies in Education*, Volume VII.)

We look up to sky—
Blue sky covers us,
Sun smiles upon us,
Sun loves us,
We clap our hands with joy.
We dance around the sacred oak tree.

Second Grade when studying the *Early Herdsman**

PHEIDIPPIDES

Pheidippides is running along the water. His heart is full of fear, his legs are tired, he is weak, he falls down beside the brook and shouts "Pan, Pan."

Pheidippides hears the sweet music of Pan's pipe. He feels the rough hand on his head. He jumps up and looks around. Though Pan is gone he feels gay.

Pheidippides' heart is full of joy. His legs are strong. He runs along and whistles as he goes. He rushes into the gate of Athens and says, "Pan, the great God, is going to help us," and all the men's hands go up with joy.

Georgette T., Fourth Grade

*See article, "Creative Effort in the Morning Exercise."

PHOENICIA

See the white-capped top of Lebanon
With its forests grand.
The fir trees and cedar trees
Are solemn as they stand.

In the market place of Tyre
Men work like busy bees.
The market place of Tyre,
Is the market of the seas.

The vessels of Phoenicia,
The seagull's screaming cry,
A trading vessel's sailors
See these things as they go by.

James L., Fifth Grade

THE WAVERUNNER

Over the waves it ran.
Keeping time to the beating of water,
The Waverunner skimmed the water so blue.
The Waverunner fought many battles.
The Waverunner skimmed the water,
The waters so blue.

Betty C., Fifth Grade

PIONEER'S ADVENTURES

Beyond the Alleghanies
Where many a man had failed
To find the great unknown,
I longed to wander forth.
So I ventured toward them,
Tramping wearily over the mountains,
Searching through the primeval forests,
Wading through the merry streams.
Plentiful was the game in the forest,
Plentiful were the fish in the stream,
And many the fowl in the air.
Then I sought myself a site
To build me a shelter.
I came upon a little upraised land
With trees grown thickly upon it.
I at once set to work
To clear a little opening,
And with the logs I cut
I erected a little shelter,
And thus I found my longed-for land.

John M., Sixth Grade

DESCRIPTION OF AN INDIAN

In a remote place in the forest there stood an Indian. A man untrained in the art of observation could not have distinguished his dark skin from the drab-colored forest behind him. Suddenly a hoot like that of an owl was heard. The Indian did not stir. His black eyes remained as they were. Then he dropped softly to the earth and one could see his mouth set in a grim smile. He disappeared in the bush, wriggling so little that the muscles in his bare arm scarcely moved. A minute later when the enemy appeared there was not a torn leaf or a displaced branch to show that anyone had been there.

Robert W., Sixth Grade

THE EXPLORER

During the dark gray days of fall
I sit by the fire and wonder
If the lands I seem to see behind mountains
Are true, or if they are my dreams.

At night when I am in bed adreaming
I seem to see myself travelling
Over thin, old, rugged paths
Which lead into the great unknown.

Eventually I wandered over the purple-headed mountain,
And came to the great wide plains below.
There to my astonishment were many herds of buffalo feeding.
I knew at first sight this was the land of my dreams.

Peter L., Sixth Grade.

THE LAND OF THE SUNSET

Down the long gray aisles of the forest,
Over grassy plain and marshy hollow,
Far away over the blue distant hills,
Stretching on toward the land of the sunset,
A lone hunter picked his pathless way.

Virginia McG., Sixth Grade

In the days when man was nothing more than a great ape, Shah the mighty Mastodon roamed the plains of Northern Europe. Many were the times that Shah had fought battles with other wild beasts, till now he was king of all animals except Gon, the fiercest and wickedest of the animal world; for none cared to give battle to the terrible Saber-Toothed Tiger. But it came to pass one day that Hib, youngest of the herd, whose tusks were just beginning to show, had been slain by the terrible Gon. Then Shah rose in his wrath and told the best of his warriors to sharpen their tusks. Many trees were scraped of their bark, for every

Mastodon that could fight sharpened his tusks. That night a council was held, and Shah told them that each should swear to hunt for and to try to slay the wicked Gon. So with loud trumpeting they swore a great oath that should any not do his utmost to slay Gon then he should die. Then they parted, each going his own way. And it came to pass that Shah went to the East to ask of Kee, the wisest of apes, what would be the best course to follow so as to find and slay the wicked Gon. Kee told him that Gon had a lair a thousand and ten leaps away on the right of the bright tusk of Shah; also he told him that Gon was very wary and it would be hard to catch him napping. Morning came, and Shah challenged Gon to fight.

Then Gon came from his lair, and they fought long and hard; first Gon would spring and then Shah would nearly crush him. So the fight went on till the sun rose high in the heavens, when Gon, gathering all his strength, made one last desperate spring and landed full on Shah's back. It seemed that Shah would hardly live to see the light of another sunrise, when with a mighty effort he swept Gon off his back by running under a tree. Thus the terror of the brave as well as the cowardly lay at his feet. He made short work of Gon by merely stamping one great foot on him.

Shah lived to an old age, and even to this day his memory is held sacred by animal folks the land over.

Joseph K., Seventh Grade

BROTHERHOOD

England, 1381

Scene I. An Inn

(At right a table and two benches. At left, back, a sideboard upon which are numerous tankards and pewter plates. Several peasants lounging about, drinking ale. Enter soldier. Strides across to table where Diccon sits.)

Soldier—A mug of good English ale, mine host.

Diccon (shouts to Bess, the innkeeper's wife)—Art there, old Bess?

Soldier—These ten long years have I been fighting in France, and pouring their thin wine down my gullet, but I have not forgot the smack of good October ale. (Bess brings ale to Diccon and soldier. They touch tankards and drink.) That's the right taste, is it not, brother? Ah, ye lucky Englishmen, with your good beer and good beef! Little ye know of starving, of beatings, of jails. 'Tis the down-trodden dogs of France that know hardships. (Peasants, astonished and angry at this speech, leap to their feet and protest.)

Wat—Lucky!

Will—Hardships!

Jock—Work, work, work! Boon work, week's work, fines!

Wat—Little wot you what we must bear, tied to our land like dogs!

Bess (in the tone of a person who is always laughed at)—And the ropes cut deep, too.

Ralph (striding forward)—I tell you, we will not stand it many days longer. We will cut the bonds that bind us to the land, and every man will be free.

(Enter young maiden, pale, ragged, starving.)

Maiden—Mistress Bess, where is she?

Bess—Here I be. What wilt have?

Maiden—Pray, good Bess, a cup of ale. (Jock, pitingly, gives maiden a piece of money. Bess gets ale and the maiden goes on.) We could buy both bread and ale, had not our last penny been spent for the poll tax. (Exit maiden, courtesying.)

Bess (to soldier in a scornful tone)—Ah, we lucky Englishmen.

Jock—An we had no wrongs, why, thinkest thou, should we flock to hear the words of John Ball?

Soldier (scornfully rising)—John Ball, John Ball! Who then is this John Ball of whom the very babes chatter? North and south through the countryside, villein and freemen alike prate ever of John Ball.

Jock (with indignation)—Who is John Ball, sayest thou? Who then art thou that knowest him not? These twenty years hath John Ball gone about, stirring up the men of Kent and Sussex.

Bess (mockingly)—Aye, the pestilent priest! Let but the Abbot lay hands on him and he will rot in a dungeon.

Ralph (fiercely)—Rot in a dungeon! Not while ten thousand stout-hearted Englishmen can batter down iron-bound gates.

Wat (strides toward soldier and speaks in fierce tone)—Before the new moon, even the nobles will know of John Ball.

George (during this speech to soldier, others nod their assent)—Aye, the nobles! No more will they sit idling away their time in useless luxury. All men are equal, saith John Ball. Is this the will of God, to have some men toil day after day, and eat black bread and herd in kennels, while he who sitteth at ease in lordly manor house or monastery is a parasite on his own wretched brethren?

Soldier (rising and speaking with a sneer)—And why, my good friends, do ye sit here idly drinking ale, and gossiping like old women? Why not up and to arms?

Will—Up and to arms, sayest thou? At the word of John Ball we shall be up. We shall march to London. No man will dare oppose us, nay, not even the nobles, because the King will be our leader.

All (with enthusiasm)—Aye, the King!

Diccon (with the manner of the habitual jester)—The king, the king! Doth he ever think of us? No, the King is like to a weather cock; whichever way the wind bloweth, with that side will he go. (Laughter.)

Bess—Aye, Diccon, and there be thy chance. Ye man must see to it that the wind bloweth your way.

(Enter bailiff. Serfs take refuge in corners.)

Bailiff (brutally)—Silence! What do all ye lazy serfs here? Away, every man to his patch of land!

Jock (to soldier, in a terrified tone)—'Tis the bailiff!

Lawyer (coming out from corner. Peasants look at him with hatred. Their hating and longing for revenge increase as he speaks)—Aye, bailiff, in good time hast thou come. These ignorant hounds here are planning a rising against their masters. They are thinking to burn and plunder the manors. They expect to march to London and see John of Gaunt flee in terror at the sight of a few serfs.

Bess (in lawyer's ear)—Aye, old cackle-throat!

Bailiff—Do ye serfs, ye villeins, ye breakers of the law, think that ye can start a rising? Ye crawling, cringing vermin! Bah! Your great rising will melt like snow before the sun.

Messenger (outside)—Is the bailiff within? (Enter messenger breathless.)

Bailiff—Well, what's to do?

Messenger—I come to tell thee that Peter, who ran from the land two moons since, on Lammas Eve, has been taken. (Serfs fall back in despair.)

Bailiff (savagely)—Two moons—sixty days—sixty lashes on Peters bare back! Gape at Peter an hour hence, where he sitteth with bleeding back in the stocks! Can such as he and ye put down the mighty golden nobles? (To the lawyer) Do thou, sir man at law, bide here. Shortly I return. I shall need thee to show Peter's serfage. Stay, take thou this pouch. (Hands pouch to lawyer.) 'Tis the money from the court fines. Make a careful accounting in a fair hand against my return. And ye, lazy wretches, back to your fields! Idle here no longer! See to it that I find you not again at your silly plots. (Exit bailiff. Lawyer attempts to follow him.)

Bess—Aye, all of you go. Out of door with you. (Peasants and Bess jostle lawyer and prevent his exit. Serfs jerk him around from one to the other.)

Lawyer (in a panic)—I will with thee, sir bailiff, an it please thee. Get ye home, villeins! 'Tis bailiff's orders. (Peasants hold him back, and door closes on bailiff.)

Will—Art afraid, friend?

Ralph—Nay, stay thou here. 'Tis bailiff's orders. Spy?

Wat (fiercely)—Now, there babbler, thou tell-tale! We have thee. Thou hast tied a rope around thine own neck, using thy learning against brave Peter.

Diccon (mockingly measures lawyer's neck with his fingers)—'Tis a very short neck. Let us stretch it.

Jock—Aye, a lawyer! Cause of all the evil which has come upon us.

Bess—Aye, my fine speaker, my fine writer! He fain would speak. He will prove by parchment that he is no foe of the people. (Ralph

puts rope around lawyer's neck and starts to drag him out. Will leaps forward. Shouts maliciously.)

Will—Drag no man to the gallows without a trial. A court! Let us hold a court. I be bailiff. (Will jumps on a table. Diccon snatches lawyer's hood, huddles it about his own neck, and leaps on bench beside table.)

Diccon—I be lawyer.

Wat (dragging lawyer before mock bailiff)—His son married a lass he loyed.

Diccon—Five groats.

(Wat wrests money from lawyer, who struggles frantically to retain it. Wat gleefully counts his money. Malicious laughter. Peasants in turn come forward with mock accusations and snatch money from terrified lawyer.)

Jock—He ground not his wheat at the lord's mill.

Diccon—Three groats.

Bess—He brought no fowl at Yuletide.

Diccon—Six groats.

Ralph—He sent no cart to the haying.

Diccon—All he has left!

Lawyer (in deadly fright)—O good people, pray, pray, do not take the bailiff's gold! I were but a dead man an I lost it. Give me back my gold, my pouch!

Will (with scorn)—Thy pouch!

Jock—Thy gold. Thou meanest our gold.

George (During this speech peasants one by one become ashamed each and restores money to pouch)—Peace, 'tis enough. Give back his filthy money. 'Twas wrung from us penny by penny while the lord wrought not at all. All men should share earth's burdens, saith John Ball, and earth's wealth. But he saith not that we shall take money, as if we were robbers. 'Tis justice we want, not plunder. An we stand, every man, by the fellowship, we shall be free men. Is not that better than gold? Will ye not give it back brothers? Wilt not thou, Wat?

Wat (grudgingly stepping forward and dropping money into pouch)—Aye, though I need it sore.

Ralph—Aye.

Jock—Aye, though Bess wants it for the ale I drank.

Bess—Hear the pretty pennies clink! (Church bell sounds.)

All—John Ball hath rung our bell! (Exeunt, calling and shouting.)

Scene II. In Market Place

(On the left a market cross. Jack Straw standing on the step. On the right a pair of stocks, with Peter in them. One hears the chanting of the peasants.)

Peasants (outside)—When Adam delved and Eve span,
Who was then a gentleman?

(They enter noisily.)

Wat (seeing Jack Straw and turning to the others)—'Tis not John Ball. Who is this?

Diccon (coming forward and gazing impudently at Jack Straw)—Mark the wisp of straw in his cap. Ho, there, Jack Straw!

Ralph—Jack Straw, what dost thou here?

Jock—'Tis John Ball doth ring our bell? Where is the priest?

Jack Straw (at his words peasants shrink back in dismay, shaking their heads)—From John Ball am I come. This very day must we rise. Many a year have we talked of a rising. This word of John Ball shall stir borough and shire. Come, brothers, be ye ready now, to-day? Will ye take bills and bows and march to London? Will ye leave plow in furrow and ax in tree? Will ye risk life for the fellowship? An ye will, follow me. Up to the steps of the cross! Wilt come thou?

Wat—I? Nay, not I. Who will care for my three swine?

Jack Straw—Then thou.

Will—Leave my plow to rust and my corn to rot? Let others go.

Jock—Wait till the oats are ripe and the barley reaped.

A Woman—My man must to the mill with the grain, that I may make the week's bread.

Diccon—Who will cut firewood for the winter?

Second Woman—Who knoweth that they will ever return! Will ye leave your babes to die of hunger, while your bodies dangle from John of Gaunt's gibbets?

Soldier (aside)—These be Englishmen, and yet cravens.

George (pleadingly)—Oh, brothers, brothers, hold not back. The hour has struck. If not now, when? Ever will ye have babes to leave, fields to till, and corn to grind. Say that I swing on the gibbet, or thou? An we win freedom for England, what is my life or thine? Did ye think that John Ball alone could set every villein free? Ye have been prating these long years of your wrongs. Now, up and strike for freedom.

Jack Straw—All England riseth. Will ye alone bide here, while all the folks of Essex and Sussex, Norfolk and Suffolk and Kent, march on London? Shall they fight for your freedom? Ye were the first to cry for justice. Will ye be the last to rise? Come, all ye men of the fellowship, and follow me.

George (from the steps of the cross)—Shame! shame on a cowardly folk! An ye be so weak, I alone will go with Jack Straw.

Soldier (strides over to the market cross)—And I with thee, comrade.

George—Come thou, too. Ralph.

Ralph—Nay, without a leader? Where is John Ball?

Jack Straw—He lieth in Maidstone Jail! (Fierce wrath among the peasants.) Hear ye his message!

Peasants—The message! Read the message!

Jack Straw (reads)—John Ball, sometimes St. Mary's priest of York, greeteth well John Nameless, John Miller and John Carter.

George—Aye, every man of us John Ball greeteth well. (Peasants assent.)

Jack Straw—and biddeth them beware of guile in borough, and stand together in God's name, and biddeth Piere Plowman go to work, and chastise well Hob the Robber—(Growl of wrath from the peasants.)

Ralph—Truly, Hob the Robber.

Wat—'Tis the King's treasurer he meaneth.

Jock—'Tis he that putteth this foul poll tax upon honest folk.

Jack Straw—and take with ye John Trueman and all his fellows, and no mo.

George—We be all fellows of John Trueman, be we not brothers? (Peasants assent.)

Bess—An I were a man, I had been half way to Maidstone Jail ere now!

Jack Straw—And look sharp, you, to one head and no mo.

All (with a shout)—Aye, Wat the Tyler.

Diccon—Now is the time to batter down iron-bound gates.

Soldier—First an ax to free Peter! (Snatches ax and batters down stocks.) Now on to Maidstone Jail. (They go out shouting.)

George—If God wills it from this day, all English men shall be free and brotherly.

Eighth Grade

The two poems, the two stories, and the narrative, which follow, were all handed to the seventh grade teacher in answer to a call for contributions to the school annual, the "Record." The children had been urged to choose any subject which they really cared to write about, with no restrictions whatever. Thirty-one children, out of a class of thirty-two, wrote on subjects suggested by historical backgrounds. These five compositions the class asked to have mimeographed.

EGYPT

Oh Egypt, now a land of ruins,
Where is all your grandeur?
There are no temples, no chariots,
No soldiers returning from conquering exploits,
No sailboats, such as were in your ancient time—
Gone, never to come again.
You look like a peacock, shorn of its plumage.
Yes, your splendor is really gone.

James L., Seventh Grade

MOUNTAINS MADE BY MAN

In the desert wild and free,
 Towering with majesty,
 The Sphinx of Gizeh stands.
 High upon the mountain tops—
 Mountains made by man—
 Wait the desert bands.

Floating down the River Nile
 Sails of white go gliding by,
 Bearing on the bier on high
 The body of a king.
 Never more his golden ship—
 Dead is he and gone for aye—

To lie in mountains,
 Mountains made by man.

Joseph K., Seventh Grade

THE COMING OF THE HYKSOS

"Hark! What do we hear? Approaching thunder? It is the infernal beasts, those things with four legs that belong to those barbarians the Hyksos. Help! help! To the citadel! Crash! Listen to them battering on the gates! Ha! we are safe. Oh, woe is upon us. Look! they are burning the palace. Parshk is in command of us. Never let him be! Never! The mad priest! Throw him over the battlements. Sorrow be with ye, ye sons of Egypt, we are betrayed—we are betrayed! Help! help! Here they are. Fight to the end. S-s-s-s, listen to their whirling blades. I yield, I yield, mercy, mercy. We are taken." Torches flash on the shining metal. "Oh Ashmur, my friend, that is all I remember of the downfall of our last stronghold."

Joseph K., Seventh Grade

THE HUNT AND A NEW LEADER

Our tribe lives in a great forest surrounded by high mountains. My name is Shahl, my father's name is Sahb, and my mother's name is Gidah.

For a week our tribe had gone to sleep, to waken and find one of us missing. Who was the thief after human flesh? Why did he seek our tribe and kill at night? He, whoever he was, was a coward!

One night I was awakened by the cracking of a twig outside our cave. Two green eyes appeared, and in the moonlight I saw the stripes of a tiger. A saber tooth. His fangs glistened. He was the robber of our tribe.

I jumped to my feet and gave a cry of alarm. The tiger was undisturbed, but he gave a fierce growl. Our tribe grabbed the spears and

axes. My father sprang in front of the tiger and hurled his spear, but the tiger leaped aside and the spear only wounded him.

Now, a wounded tiger is far more dangerous than one that is not. The wound smarts and enrages the beast. The tiger sprang at my father in a vain effort to tear him to pieces. Being used to quick action, my father sprang lightly aside and the beast fell harmlessly to the ground. He gave a roar of pain and limped from the cave. Our tribe followed him to his lair, and there to our horror we saw the half eaten and disfigured bodies of our tribesmen. The tiger, however did not stop but leaped over a rock and disappeared in the forest.

By striking flint we made a fire in which we cremated our dead and we then started on the hunt for the saber tooth.

We sharpened our spears and made ready for the signal to start. Some of us went in one direction while the rest of our party went in a different one, forming the point of a spear—thus \wedge . For three days we walked or hunted when, on the evening of the fourth day we heard the cries of our other party and the fierce roar of the tiger. We ran in the direction from which the cries came.

We saw our comrades on a cliff, trying to roll a huge rock on the beast, but the tiger would not come near enough. With our spears raised, we charged the beast and tried to back him up against the cliff over which the rock was placed. We did so, and as our brothers on the cliff tried to push the rock over the edge they loosened a small stone which fell and struck the tiger's left ear. He shied and jumped to one side as the big rock was pushed over the cliff. It missed him and crashed to earth in a hundred pieces.

I was at the time nearest to the tiger and almost mechanically I raised my spear and hurled it at him. The spear was hurled with not much force, because I was only sixteen years of age, but it did plenty of harm. The tiger could not rise, so I with my axe stunned him with a blow upon the head and my father killed him.

That night there was a jolly fire in our cave. I was stretched out on a tiger skin eating a piece of tiger flesh. Oh but it was good. All our tribe was feasting on the thief instead of his feasting on us.

My father rose from his seat. As he rose a silence fell over the tribe. His eyes gazed upon each member thoughtfully and finally his gaze fell upon me. He said, "Shahl, my son, thou hast been brave this day. For your bravery you deserve some prize or honor. I have and know of only one." He paused, he looked at the tribe, and again at me. "Son, this is your prize." He looked at the rest and said, "Sahb, father of this hero Shahl, is old, he is no longer the wonder with his spear. As leader of this tribe I, Sahb, give my place to my son, Shahl." He took me and held me up saying, "Behold your new leader."

That ends my tale of the hunt of the saber-tooth tiger and how I became leader of our tribe.

James I., Seventh Grade

PROGRESS OF MAN

Do we any of us realize how old our civilization is, or how it would be if we went back to when man was only beginning his development? What would we think if we were to see half-beast and half-man creatures dressed in skins and babbling in their own peculiar tongue? Let us imagine ourselves watching a play entitled "The Progress of Man," but remember the actors are unaware that we are watching.

First Scene

The Earliest Man, or the Beginning of Man

See the dense forests and the huge and queer animals! See the fire; over there, queer ape-like men are hovering around it; they are babbling over it; they feel the heat and are unconsciously making their brains work. Don't you always wonder over new things? There is a roar, the babbling stops; in the silence they are thinking; as a result of their thoughts they get up and pile more wood on the fire—for they are just beginning to understand the animals' fear of fire.

Second Scene

Centuries Later When Many Happenings Have Caused This Ape-Like Man to Think

This scene shows the same dense forests, but instead of the men squatting around a fire and in crude brush shelters there are villages out in a little lake with rafts to get back to the mainland. These lake dwellers have also learned to make cloth, for they no longer wear skins but have woven clothes.

Third Scene

The Land of Egypt, Much Developed for Its Time

Here we see great kings in beautiful stone temples with brilliantly colored carvings on their walls. One king is seated in a golden chair studded with precious stones. His robe is made of "woven gold;" it is beautifully planned and could have been done only by skillful weavers. There is a man kneeling before the king and he is told to rise. The king speaks to him. "I understand you have a chariot which rides in water without being pulled." The man answers, "Yes, your majesty." The king answers, "Explain it. We have found our floating trees* quite satisfactory for hauling stone down the river." The man replies, "Your majesty, my father is and has been since I was a small boy, a raftsmen hauling huge blocks of stone across the Nile to your great pyramid. I as a boy used to lie in the prow of the raft and watch the little craft push its way through the water. I also compared it with my own and a duck's swimming; a duck seems to have a pointed front that cuts the water better, and I keep my fingers together when swimming. Thus I have found I can swim more easily and more swiftly. According to this I have made a boat with a different shape from any you or anyone else has seen today. It is waiting outside if your majesty would care to look it over." And that is how the first crude sailboat came to be.

*Log rafts

This period ends the great progression period, and the countries that followed were just ones whom you might call telling people, but these early people whom I have just shown to you were the real people who had to find things out without being told.

Eleanor W., Seventh Grade

II

Every year on May Day the school's chosen Queen receives in her court poets and musicians who recite and sing in her honor. Those whom she deems most worthy—and often there are many of them—receive a flower or wreath as a mark of her favor. Here follow some of the poems which have seemed to possess merit.

SPRING

The May Queen sits on her throne.
 She is glad that the spring has come.
 May Queen, listen to our story:
 The sun shines bright in the spring.
 The sky is blue,
 The warm winds blow.
 The snow goes away.
 The rain comes down softly.
 All the trees and flowers come back to life.
 The May flowers bloom.

The trees have buds.
 The grass is green
 The butterflies are flying.
 The robins sing:
 They build their nests.
 The blue birds come back.
 Ants build their houses.
 Bees suck honey out of the flowers.
 Hornets build their nests.
 And the sun looks down on happy children.

The First Grade Children

This morning a robin awoke me
 With his song, so bright and clear,
 And while I was listening to him,
 I knew that spring was here.

Ursula K., Second Grade

(This poem was set to music.)

CREATIVE EFFORT

Oh lovely mountain,
 With winter at your head,
 Springtime at your waist,
 And summer at your feet—
 Oh lovely mountain.

Harrington P., Fourth Grade

I saw the prettiest sight
 From my window on a train—
 I saw the fruit trees all in bloom,
 And yellow daffodils,
 The weeping willows all in bud,
 That look like pepper trees.
 The sun was setting in the west.
 Beyond the pinkish hills,
 A little, trickling brook there was,
 A-going in and out.

Herbert S., Fourth Grade

POEM

Straight and tall the poplars grow
 Even to my window high.
 Stretching from the earth below
 Every branch desires the sky.

Roger S., Fourth Grade

SCILLA

A carpet of blue
 Mixed in with green,
 The yellow green
 Of tulip sprouts—
 Among the scilla
 And tulip sprouts
 I could not see
 The dark brown earth.
 The fairy's ballroom
 Could not be
 More beautiful than that.

Jane T., Fourth Grade

DANDELIONS

See, the glowing sunshine
 Turns dandelions gold.
 They are fairy platters
 In the grass so green.

Margery H., Fourth Grade

A GARDEN

I have seen a garden in full bloom,
With solid grass around the beds of
yellow, blue, and red.
The flowers' heads were bobbing there.
A breeze ran round about.

Jane B., Fourth Grade

THE BLUET

The bluet stands all day
Bathing in the sun,
Watching the tall grass waves
And the trees bowing down to them.

Jerome W., Fifth Grade

I

The golden sunlight filled the room,
The golden sun of May,
Carrying the breath of Spring
To all that sleeping lay.

II

To purple violets slumbering
In a china bowl
A message from a distant wood
From brothers on a knoll.

III

A message of good cheer it brought,
Of love and hope and May,
To cheer imprisoned violets
That sweetly sleeping lay.

Marjorie S., Eighth Grade

In the spring, in my heart
I can hear river waters
Rushing and babbling, to part
At some stone in the flow.
I can see green moss clinging
And ferns bending over,
And the snake grass spring
In slow, shallow places.
The yellow water lily
Is blossoming once more
And the mud-turtle awakens
And scrambles to shore.

Janet B., Eighth Grade

The wheel of time steadily winds,
 Turning the mill of all living things,
 Each spoke a season, changing our world:
 The warm summer's weather, the falling leaves,
 The snow and ice, and a sun to rise
 On a wonderful season, ever new and inspiring
 To all peoples in the cycles of time gone by.
 Each time the great wheel rounds to spring,
 New hopes and joys are born in the hearts of those that live.
 The tree senses it, loosens its crust-like bark,
 Releasing new buds from their sheltering prison.
 The bird feels it, building his nest
 And singing his Springtime song.
 The beast knows it, seeking fresh pastures of new grass.
 And man senses it, feels it, and knows it
 In his soul.

Betty H., High School

A CITY SPRING

Morning—

The air no longer a stinging lash
 That cuts one's face,
 But warm and drowsy.
 Things wake from their night's sleep
 And with half open eyes
 Turn their heads to the warm sun.

Sunset—

Enchanted air,
 Low descending sun, now a crimson ball,
 Now flaming in a thousand colors
 Filling all the sky,
 Now fading slowly, softly,
 Behind tall buildings and newly budded trees,
 Now gone. The night is born
 In soft gray;
 Now it deepens, and the stars appear.
 The city sleeps.

Romola S., High School

I wish I was a cloud
 With the bright sun on my crumpled white hair
 And my face down toward the green earth,
 To loll and roll lazily in the cool blue,
 And stretch my lacy body in the comfortable universe.

Allan B., High School

III

The school publishes an annual, "The Record," to record the experiences of the entire school each year. An editorial staff composed of the older children "makes" the book—no small experience in creation—but every grade contributes at least a page. There is a "literary section" representing the efforts of children of all ages. There are opportunities for the publication of much miscellaneous material. English teachers allow many of these contributions to be handed in to English classes for criticism; and of course some of the more "literary" attempts were made primarily for their own sake, and the result handed to the Record staff only on second thought. But in the main the Record furnished the motive for writing what follows.

The Fourth Grade Pages in One Year's Record**A GREEK SCHOOL**

Ariston, sitting on one of the stone benches that lined the walls of the school room, saw in the courtyard the bronze tip of Athene's helmet. The fragrance of the oleanders and roses, and the beauty of the palms shading the white marble columns, seemed to guide his stylus, as he wrote on his waxed tablet these prayers:

TO ATHENE

O, Athene, Goddess of the golden shield,
And Goddess of Wisdom, hear me.
Give me power to fulfill what I have undertaken.
Guide my steps, that I may come back to all my friends.
If ever I have done anything to honor thy name,
Fulfill my wish.
Let me do all I can to help my country.
May you guide my steps back to safety.

ACHILLES' PRAYER TO ZEUS

O, great Zeus, Lord of the Thunderbolt,
Cloud-gatherer, Father of Apollo,
Brother of earth-shaking Poseidon,
Son of Cronus,
O, thou mighty one, give ear and hearken to my prayer.
Thou, who art father of men and gods,
Thou eatest ambrosia and drinkest of nectar.
I have built temples to uphold thy righteous name.
I have burnt fat cattle to thee in sacrifices.
If all this hath pleased thee,
Fulfill my desire.
Save Patroclus from all harm and danger,
And send him back to me crowned with victory.

CHRYSES' PRAYER TO APOLLO

O, Apollo, Lord of the Silver Bow,
God of the Sun, and son of Zeus,
Loved by your friends and feared by your enemies,
Thou who are counted among the greatest of the Immortals, hear me.
I have built temples for thee to rest in.
I have burnt sacrifices to make thee strong.
I pray thee to grant that my former offerings please thee,
So thou canst hearken to this, my earnest prayer.
Let thy terrible arrows come upon the Greeks who took my daughter.
Let them suffer as I suffer, for dear Chryses.

The gong sounded, and the boys filed out to the gymnasium. They divided into groups. Some boys were jumping, others throwing the discus and spear; still others were wrestling and boxing.

So busy was Ariston, playing the lyre and putting his prayers to music, that he heeded not the gong and forgot his companions, until the master entered. "Ariston," he called, "Why art thou not with thy companions in the gymnasium? Go thou quickly and exercise thy legs on the running track."

At the end of the hour, the boys ran shouting and laughing into the court, eager for lunch, after their strenuous exercise. As he munched the cooling purple grapes, Ariston breathed a prayer to Dionysos.

HYMN TO DIONYSOS

Dionysos, Dionysos, all praise to thee,
Your fruits and vineyards we all do see.
Rocked in a corner of the sky,
You as a youth did lie.
Hail! Hail! to thee, Dionysos.

Zeus, your father, mighty and strong.
Gave unto Hermes you, a lover of song.
To Mount Nysa he bade him fly,
There you were sheltered in a cave near by.
Fair-haired nymphs for you did care,
Silenos and Satyrs each had a share.
Out into the world you finally strayed,
To teach all people the things you made.

Lesson followed lesson—counting, reciting, modeling, painting, chanting ended the day's work. Ariston hurried to meet his father, who was waiting in the court for him, very thankful that he had escaped that day having his knuckles thumped.

A pool of water, in the city's streets at night,
Bathed and stilled, in the moon's soft, silvery light—
Opaque and muddy through the long work-a-day,
Now clear and shining, with the fairies at play—

Shallow and ugly, sun glaring bright,
Transformed, deep and beautiful, by the magic of night.
The beams glance and glimmer on the surface at will.
The pool rests in glory, peaceful and still.

Then Lord, we, thy children, do ask thee this boon:
Reveal more of thy wonders, as the pool and the moon.

Barrett C., High School

ON BEING AN UNCLE TO A NEPHEW

I was visiting my six-months-old nephew, and after two days of said visit I became fully convinced that uncles are more to be pitied than envied. I did not feel any pride in the realization that I was gazing upon the first human being who would have to prefix a title to my name whenever he addressed me. Neither was my hair beginning to turn gray, nor were my shoulders beginning to sag, because of the grave and weighty responsibility that had been thrust upon me when the creature first saw the light of day.

When I first met the youngster the usual form of introduction was dispensed with, owing to mutual agreement of all concerned, the reasons being that the child was not quite old enough to acknowledge my salutation according to the proper method stated in the book of etiquette, and that he might break out with some uncalled-for remark to the effect that I greatly resembled the picture of the cow on the wall. What the kid was actually thinking about I cannot say. Perhaps he and I were both thinking of the same thing: when was the next meal to be announced?

My first impression of the child was that he must grow a beard as quickly as possible on the top of his head, as he could never be a handsome bald man, owing to the irregular shape and rough topography of the upper section of his skull. My next thought was that he resembled a Chinaman. However, when his grandfather asked me if the little fellow didn't look like him, I politely said he did, and added that I thought the kid possessed an extremely homely mouth. I learned later that the mouth shaped like his is termed a Cupid's bow.

I drew the wrath of the mother when I innocently said that I thought the baby had hair and teeth like his mother. I had forgotten that the baby was still but six months old.

The only person with whom I could frankly discuss the little fellow was the kid himself. When I would start to tell him about the noble things I had done as a child, my young nephew would probably applaud

my actions by falling asleep. Then, in order to relieve my feeling of hurt indignation, his mother would rush in and explain that he was tired, since he had had no sleep for nearly an hour. When I tried to amuse him, he began to cry. Once, however, I did manage to snatch some smiles from him, and asked him if he didn't think I would make a good comedian. Seeming to comprehend my question in the same manner that a dog does, he answered it by repeatedly poking my nose. I sternly told the youngster that if he were my size, I should challenge him to combat for such an insult.

There was one thing about my visit that restored my faith in human nature, and convinced me that the younger generation were not actually going to the dogs, but were instead really following in the footsteps of their elders. This thought was brought forth after viewing the infant's bath and noticing the great aversion the kid had for soap and water externally applied. I came away with a happy feeling that, after all, the boy was a chip off the old block on his uncle's side.

Jack C., High School

APRIL

April, lovely child in soft, wet rags,
With tears glist'ning on thy tender cheek,
And eyes like calm, still pools,
Fringed about
With dark, dew-spangled lashes,
Whence cometh thou, thou winsome wench,
Now throwing apple blossoms to the wind,
And now
Stopping to weep, within a soft, deep cloud.

Jean Mac G., High School

PINES

Tall, stately guardians of many secrets,
Ever wont to sigh, as if the secrets
You held were of great and burdensome nature,
Oh, my soothing friends of years gone by,
What is this secret?

William M., High School

THE APPLE TREE

The apple tree in blossom
Is like a fluffy, powdered courtier
Of olden time,
Bowing low before his dainty lady,
The rustling of whose skirts
Flutters the soft petals
He so gracefully has sprinkled in her path.

Letitia V., High School

STORM

It is calm, but ominous clouds pass overhead.
Not a leaf stirs nor a blade of grass moves.
Then, like a lightning flash,
The storm is upon us.
The wind whistles by,
Heedless of the trees
As they rock to and fro in bended submission.
The heavens open, and the rain
Pours down upon us without mercy,
Till the earth, restless under the lash
Of the torrents, swallows them up,
And laughs in triumph as the storm lifts.

Bernard W., High School

A WAVE

She rushed toward the shore,
Pushing aside the insistent waters
As they followed close at her heels.
She tossed her head back laughing,
Sprang over the waters as they crushed her,
Burst into a fountain of rainbow colors,
Then, snatched back by the angry foams,
Was swallowed by the inexorable sea.

Anna P., High School

IV

The "Weekly" is really a news sheet, but it runs as filler short compositions of various kinds, and it publishes annually or semi-annually a literary pamphlet called "The Barnacle." Children throughout the school write for these publications.*

A WINTER SCENE, JANUARY 16

The room was cold with the winter wind. Frost covered the windows in beautiful designs of mountains, pine trees, and forests. Outside, heavy snow covered up the sleeping grass. The trees were white against the cold winter sky. Small snow flakes, soft and white, fluttered through the frosty air. Not a thing moved. All were asleep.

The snow was ever falling. Covering up the city dirt. No black smoke came from the lonesome chimneys that stood up like some big masts against the white, snow-covered city. Even the speeding automobiles slowed down. Everything was covered with the wonderful blanket of snow.

Frances S., Fifth Grade

*A recent editor conceived and executed the plan of writing the history of the Weekly, and the school published his account in pamphlet form. It can be had upon application at 15 cents a copy.

CHICAGO

I

The sun set behind a bluff as Manake slowly paddled down the shores of the big lake. Approaching a small stream he stopped; then as if reassured he turned his canoe into the stream and continued paddling. On either side of the river was a marsh scarcely higher than the stream itself. Now and then his canoe scraped against the mud bottom or struck against a stump. Suddenly Manake stopped. "Chaque," he muttered, and put his hand to his nose. Then turning his birch canoe he quickly returned to the mouth of the river and continued his way along the shores of the big lake until he should find a more suitable and pleasant camping ground.

II

Early in the nineteenth century a schooner entered the small river that poured its lazy waters into a big lake. It was carrying provisions and arms for the little Indian trading post. Slowly and carefully the vessel crept upstream. Along the sides were small craft—ferries and fishermen's boats. On the banks, too, were hundreds of Indians, grunting in surprise and pleasure as the big canoe with white wings came to anchor. On the left bank, some five or six hundred feet away, was a neat log cabin in front of which a white man was working, surrounded by a dozen or more Indians. He was the first of his race who had ever settled here. He was known as the Indians' friend and helper.

III

Hundreds of automobiles are whirling across the great bridge. On the right and left, tower skyward two huge, illuminated buildings and beside them two skeletons of buildings as gigantic as themselves. There is a roar of industry and traffic—shouts of truckmen—chugging of motors—clatter of elevated—rattle of street cars—roaring of overhead trains—shrieks of whistles. Throngs of people stream through the street. The air is thick with a smoky fog. Lights gleam everywhere. The river moves silently—away from the lake.

John McF., High School

A WET NIGHT

The street lamps, foggy with rain and the observer's blurred vision, flutter; the water slaps the sidewalk steadily; the thunder booms and rattles overhead; a train whistle raises its long, mournful hoot in the distance. The taxi chains rattle on the slippery asphalt, and the autos swish as they run down the street. Now and then a flash of lightning shoots a glare over the scene. The streets are almost empty and the lights few. It is a wet night, the night for a misanthrope or a dreamer.

Across the way is a big hotel. It has a glass and metal canopy over the door, with many sparkling little lamps dotting its edge. The big negro in the blue uniform stands out against the background, for the glass door of the place permits the passage of much of the interior brilliancy. The whole building is pointed with lights. People come out of it, stand for a minute, and are swallowed up and swished away in taxicabs. The doorman's whistle pricks the stillness, auto engines groan, tonneau doors slam, voices, the hard ones of those accustomed to metal and darkness, boom out on the dank air. Then the blanket settles down again, unruffled by the little flurry beneath it, to be disturbed again by the repetition of the sounds, the hoot of the train whistle, and the profanity of the cabby as his engine stalls.

We pass down the side street away from the hotel. At regular intervals the street lamps glow, golden blurs on a dark gray sea. Occasionally a light is seen in an apartment window. The rain drips steadily from broken troughs, falling with a splashing sound as it reaches the ground. A car gathering speed and spewing smoke lurches down the street. Night sits on the town like a huge, monstrous thing.

We pass on, hunched up, the rain beating in our face and dripping from our hat brim. A pipe, long since out, hangs from our mouth. Our hands, dirty with the grime of the day's work, are stuffed in our overcoat pockets, one of them feebly protecting a folded newspaper. Our feet are wet with the splashings of myriads of rain drops and the water of many puddles.

At last, after passing a succession of deadeningly similar apartment houses, we come to our little box. To the uninitiated it would seem exactly like the rest, but to us it is different. This is a particularly important place. We live here.

We enter, press a button, push open a growling door, and go into a stuffy, heavily carpeted hall. We climb three flights of stairs and open a door. The smell of cooking meat, potatoes, and cabbage drives keenly into our nostrils. Ah, what a satisfying place is home! We may quarrel with the other inmates, we may hate to return to it, but it is there, immovable, always ready for us.

We remove our hat and coats, put on a pair of slippers, and fall into an easy chair to look through the paper. Scare headlines greet us. "War with Afghanistan Imminent!" says the streamer. Who cares? We are in a soft chair in an indolent mood, with a good dinner presently to confront us. Taxis may rattle, train whistles hoot, war with Afghanistan imperil the peace of the world, but we are comfortable, our soul at peace with the universe. We sink back into our chair, luxuriating in indolence and contentment. Let the old world roar on. We are at home!

Leonard B., High School

V

Last, though so very far from least, we print a miscellaneous group of compositions. Some of these were the unrequired efforts of children, brought to the teacher at odd times—as surprises by little children; often without comment but usually with a request for criticism by the older ones. Other contributions were made at times when a task had been assigned to write whatever each person most wished to write. This kind of assignment is usually accompanied by a definite alternative to fall back on in case one has no ideas. A few pieces of prose here cited were interesting applications of fairly definite assignments, although in general we try not to compel all the members of a group of children to write on the same subject at the same time, it is so seldom that they can have simultaneously the same emotional or intellectual material for expression. Such efforts as most of these things represent were made chiefly as a result of the certainty of finding a sympathetic eye or ear—or several of them.

**Little flowers, how-do-you-do?
How long are you going to stay?
Through all the silent day?**

Mary Jane, First Grade

THE WAVES

**The waves dashed on the rocks so high
They almost reached the sky.**

A BEE

**One day I saw a bumblebee in the air,
He flew up to me and pounded upon my hair.**

WHAT THE LETTER "A" SAID TO ME .

**The letter "A" said to me,
Oh, won't you tumble over "D" or "G"?**

Alice M., First Grade

THE SNOW

**The clouds sail the sky
When we are skating, you and I.
The houses look so pretty, covered with snow—
All the houses, the high and the low.**

Rosemary K., First Grade

The waves come rushing in
And make a song as they come.
Foam comes with them
And leaves a wetness on the shore.
They wear their white caps
And little blue coats.
They shine in the sunlight like diamonds.
The waves bring in shells
And make holes in the sand.

Second Grade

THE SNOW

The snow is white,
To my delight.
And when the sun
Shines on it bright
It looks like silvery fairy light.

Ursula, Second Grade

WINTER

In winter I can use my sled—
I go bumpity, bumpity, bump, down the hill.
Up I climb to the top again.
Down I go bumpity, bumpity, bump.

Second Grade

Between the dark blue mountains,
Beneath the tall green pines,
There's where the bright sun shines
When it first rises.
When the night comes, then the moon-shadows
Darken the mountains.

Charlotte C., Second Grade

THE FAVORITE HEN

Once upon a time there was a hen. She wanted some baby chicks, so she laid four eggs in four days. She sat on them all the time except when she ate. One day the eggs cracked open, and out came four little chicks. Now she was very happy. When the farmer girl came out, she was very pleased, and so was everybody.

This hen laid an egg every day and was helpful all her life. And all the other hens liked her, because she always let them eat first and she ate what was left.

One day she laid a half of an egg, and she hatched this egg, and out came a half chick. Now this chick grew like her mother and got a full body, and when the mother died this chick took her place and was just as good and helpful as her mother was.

Alice M., Second Grade

CREATIVE EFFORT

SNOWFLAKES

Ho, you little snowflakes,
Flying in the air,
How you come a-tumbling
Down so fair.

Alice M., Second Grade

AN EVENING IN THE WOODS

The moon had thrown
Its silver glow
Over the pines
That were whispering low.

The fairies had formed
A magic circle
Around the great oak.
Then the insects awoke.

The Queen was wearing
A lovely gown,
And a little page
Was carrying her crown.

The cricket was
Fiddling a tune
To a new dance
Called "The Moon."

The fairies were
Swaying gracefully
Under the branches
Of the great oak tree.

Dorothy K., Fifth Grade

POOR ME

Di dul de dum,
I hurt my thumb.
How did I hurt my thumb?
Di dul de dum,
I started to run
To tell someone
I hurt my thumb.
I said
Poor me! Poor me!
Di dul de dum.

Bob McK., Fifth Grade

CANAL

When the boats come from harbor to harbor,
And the children yell at us to stop and give them a ride,
And the sea gulls swoop down at us,
I think it is like a dream.

Melville R., Fifth Grade.

MUSIC

I heard a noise from far away off,
I listened once, I listened twice, I listened once again.
I watched with curious eyes,
When off in the distance
I could see a bright light.
'Twas music coming toward me.
I looked again. Said I, "It must have wings."
So now I know how music comes,
It has wings and a bright light to see where it should go.

Frances H., Fifth Grade

A lighthouse at night
Is like a cat's eyes
Gleaming from a dark corner.

Gordon B., Sixth Grade

A wave comes,
Like a prancing horse,
Quivers a moment as though undecided,
Then falls back.

John C., Sixth Grade

The fog comes over the land,
Like a lovely great gray cat
Stealing into a room.

Ruth N., Sixth Grade

A poem reminds me of the flying of a bird
As it flutters through the blue sky.

Gordon MacC., Sixth Grade

Taking off his ragged cap, the smiling Italian made a low bow,
picked up the coins, and placed them in the pocket of his baggy trousers.
Then gently picking up his tiny monkey he patted him on the head and
went away, his bright red necktie flapping in the wind. All the children
trooped after him.

Ruth L., Sixth Grade

THE NORTHLAND

A whistle shrill across the plain,
The call of a shivering blast,
The wind-torn snow in whirling clouds,
Bounding and leaping fast,
The ice floes' seething cataract,
The maddened, rushing stream,
And the loveliness intensified
By a wolf's starvation scream.
To some it is only the cold and the dearth
That appear in this land of the snow,
But to me the land is warmed by love
Of the wind's sharp, cutting blow.
I've spent year on year in the Frozen North,
With the crystal snow 'neath my feet,
And my face all skinned by the driving wind,
And by the swirling sleet,
But I love it all, the wind and the storm
And the ice in the foaming stream,
And, most of all, I am thrilled to the core
By a wolf's starvation scream.

Kay C., Eighth Grade

MY EXPERIENCE

It was dawn.
I walked barefoot through the grass.
The cool dew freshened me,
The breeze beckoned me,
I looked around.
I knew my world was well.

Bernice R., Eighth Grade

NOBLESSE OBLIGE

Browni didn't like Tabby for several reasons. The first was because of her color. Tabby was a nondescript cat. She had a general gray color with frequent bars of black, and her eyes were a little too green for Browni's comfort. So for general reasons Browni rather avoided her, of course not admitting that it was the green eyes that repelled him, but thinking, rather that the odors of long unemptied ash bins and those of juicy garbage cans had insinuated themselves into the cat's fur and nauseated his aristocratic young collie nose.

It was seldom that the young noble-dog ventured back into the alley region, for he was a member of the "Boulevard Athletic Club," along with "Pep" the Scotch terrier and "Shep" the police dog. Indeed, the experience now in progress took place during his second venturesome visit into the great unknown, in his short four-score days of life.

Browni trotted down the street nonchalantly, the ear with the white tip held pertly in the air, while the other drooped and flopped in the rather collegiate style he had seen older dogs use. Browni was pleased with himself—one could see it at a glance from his queer side trot and from the triumphant angle of his tail. He had just succeeded in chasing a big black beetle into his hole, and the dog felt the better for it.

Browni rounded the corner of a red brick house, when whom should he spy in the middle of the walk but Tabby. With a startled "woof," he stopped in his tracks. The green eyes glared at him out of the darkness of a hot, smelly summer night. Browni stood and looked, and Tabby stood and looked. Slowly, inch by inch, the dog's tail sank, and the conspicuous white spot crept closer down toward the rest of his head. While the dog's tail disappeared the cat's was raised higher and higher until it pointed straight up, and the standard of war fluttered at the end of it. Then Tabby's back began to curve. This had always been a frightful sight to Browni, and it pained him so that it brought back a bit of his courage. "R-r-r-r-woof," he managed to hear himself threat. "S-s-s-s," was Tabby's reply. The sounds fetched back the dog's courage, and he was immediately possessed by the demon Curiosity. Up went his tail, up went both ears, and his paws fairly danced in their eagerness. "Wuf," he challenged, "wuf" again, and yet another "wuf." By this time he was dancing around the cat in full mastery of his playful little body, and emitting sharp, high-pitched "wufs" at various intervals.

Suddenly, without any warning, the cat gave a loud "hiss-s-s pft," and darted off in the direction of Hilger's ash bin. The poor pup fled in holy terror, his tail held tight between his short baby legs. His ears he allowed to flutter where they would, and his nose was pointed on the home trail.

Not hearing anyone in pursuit, he slackened his wobbly gallop and looked cautiously behind him. To his utter amazement he saw Tabby jump into the ash bin with a green water-melon rind for her kittens, and not give a snap of her paw for the fleeing canine. This rather touched Browni's vanity, but he decided to make the best of it. "After all," he thought, "the kind of a cat who would do a thing like that is not the sort of a cat I wish to associate with."

With a happy wiggle of his tail and a happy nod of his head, he turned onto the boulevard where he met his more respectable friends.

Alice H., High School

SING, CHILDREN, SING

**Sing, children, sing!
Sing of the Child
Born in a manger
Lowly and mild.**

**Shepherds and kings
Came from afar
Seeking the Saviour,
Led by the star.**

**Jesus is born,
Saviour and King.
Lift up your voices,
Sing, children, sing!**

Catherine D., High School

Thunder rolled, crashed, and went muttering off through the heavens of a world fifty thousand years younger than at the present time. The western horizon was suffused with a fast approaching bank of storm clouds, which, reaching forth with inky fingers, blotted out the dying efforts of a sickly sun.

Far below, upon this sphere of ours, stumbling across a rocky plain towards a protecting group of trees, appears that which upon first perception one would have undoubtedly mistaken for a huge ape possessed of the very essence of fear.

His arms are raised above him in a clumsy, shielding gesture. From half distended jaws are emitted low grunts, guttural groans, and sharp screams of evident distress.

The protecting boughs of the first tree of the group are near. He speeds forward.

Suddenly, from the very heart of the enveloping blanket of clouds, leaps a great, jagged beam of lightning. It rifts the heavens, plays along the edge of the clouds, and then, shooting downward, splits the outstanding tree, turning it into a blazing torch.

With a fearful cry, the creature flinches, recoils, and starts back, only to be halted by another beam slipping from the very edge of the storm-banks and reducing a cliff-like rock to flakelike splinters.

He ceases to cry, totters a moment, and then falls to the earth. Within him a great struggle is going on. He wishes to thank a Power for his deliverance, and to request its aid in the calming of the distraught elements, a Power which he feels exists, and yet about whom no clear thoughts are as yet entertained, a Power instilled into his cosmos through fear, danger, and the ultimate delivery from these when he was unable to deliver himself. Religion has come to mankind.

Barrett C., High School

ATHENS

Like a heavy frost,
Which covers a pane of glass in midwinter,
The thick, white dirt
Lies over the entire city of Athens—
The luxurious city of the past,
Triumphant and at the acme of civilization
With its white marble Acropolis
Shining in the glaring sun,
Like mother of pearl jewel-boxes.
Far from the city of splendor and wealth
Is the Athens of today.
A city of ruins, of paupers, of beggars,
A city crushed as if some
Mighty being had trampled on it.
Desiring naught but to be let live,
Athens exists.

Janet L., High School

A BABY IN THE CASE

The man sighed, barely audibly. He was not an imposing looking figure, and no one in the car turned about to notice him. He was of medium stature, with an habitual expression of inquiry on his thin, pale face. The scanty hairs on his head were pale yellow, and pale blue the eyes that looked questioningly from behind heavy-rimmed glasses. His clothes didn't seem to fit him, for his thin, bony wrists and large hands protruded awkwardly far below sleeves which were made much too short for him. His collar was limp, and the black tie was twisted, faded, and desolate looking. Everything about him was pale and insignificant. He sat in the speeding car with an infant beside him. She was wrapped in a dirty woolen blanket. He looked at the child often, and with much anxiety, to see if everything was well with her, and then he stared ahead with a bewildered look in his watery eyes.

Outside, the wind whistled, and the dark clouds hurried overhead. The incessant splash of summer rain against the car window comforted him. The train swayed, banged, and the passengers groaned with the heat and the oppressive, downheartening humidity. Many tried to sleep in cramped, distorted positions.

Across the aisle a mother lay half asleep with a dirty, smeary child flung across her knee. The child whimpered, and the mother sighed. The other passengers were all men, men with dirt-stained clothes, grimy hands, dusty shoes, and dripping faces. A large, heavy-featured Swede slumped in his seat, removed his thick, spattered shoes, and exposed his

torn red socks. The mother sniffed disgustedly, and attempted to sleep. A burly laborer snored. Bundles, unfinished sandwiches, cups, and broken boxes littered the seats. The man with the baby-blue eyes sighed again, and looked out through the spattered window.

Beyond the wire fences were wild flowers, purple, gold, white, and blue; fields of oats, wheat, and clover made the land look like a huge patchwork quilt. The man, John Smith as he was called, smiled a pale smile. For this little beauty he was profoundly grateful. He looked down upon the mite of humanity near him, and the smile faded from his lips.

"Honey, are you all right?" he whispered.

The babe gurgled, and John Smith was aware of her big, blue eyes, small turned-up nose, and rosy lips. She was a pretty little girlie, and just nine months old. So clever, too. Smith looked out of the window again. The train passed through a tiny village, and Smith noticed the small houses, the roads like white ribbons, the church spire, and the General Store with the town loiterers dozing on the benches in front of it, and, beyond, the long beckoning, swaying, waves of ripening grain. From his pocket John Smith took out a battered ham sandwich, and began munching it. The crumbs dropped upon the red plush, and he brushed them off rapidly, and anxiously hoped that no one had seen them. Finally, after much debate with himself, he concluded that the baby must have water. He got up slowly, and stumbled down the aisle. He lurched against the resting Swede.

"Oh, I beg your pardon," stammered Smith, trembling. "Sir, I hope I haven't hurt you."

The Swede stretched, but said nothing, and Smith went on. When he reached the water cooler, he filled his little tin cup and started on his long trip back. The water dripped in the aisle, and as the train went over a large bump, the last contents of the cup were spilled on the dozing Swede's feet. More painful embarrassment, more unanswered apologies, and back to the water cooler again.

At the next station a young couple boarded the train. The "flapper" wife sat down behind Smith. She took out a "Motion Picture Magazine," and began chewing her wad of gum violently. She called out in a shrill, raucous voice for a porter, and, as no one came, she flung her cheap felt hat and thin, scrawny fur piece across the aisle. The hat missed the seat, and Smith got up and quietly replaced it on the seat for the owner. He looked at her, and secretly wished that she would ask to see the babe. He wanted to inform everyone that the pretty little baby belonged to him, and then he stared ahead with a stunned look.

The girl's husband returned, and sat down beside her, resting his thick oxfords on their battered satchel, one strap of which was broken.

"You and your darn magazines. Ain't you got no intellect? Do you haf'ta read such trash? Do you ever see me doing it?" And with that the irate husband took out "Robbing the Midnight Stage."

Near Smith sat a crusty Western magnate with hot, dirty, perspiring hands. His collar was off, and his tie removed. He fussed and fumed. The rain irritated him. He walked up and down incessantly like a caged tiger. He stumbled over many feet, but he apologized to no one.

Outside, the distant lights of the small villages looked like so many stars. Shadows were falling on the green and gold fields as twilight descended. Night-fall had cooled the atmosphere only a little. The rain had stopped, however, and the moon had begun to rise over a clump of dark trees.

The tired mother removed the pins from her hair, and shook out the heavy folds. The mop of hair was so hot, however, that she twisted it in a tight knot on top of her head. She opened her satchel, and took out a fresh box of Graham crackers.

"Eat them," she said abruptly to the drowsy child, "you'll be hungry by morning."

"I wanna go in the diner. I do! I ain't ever seen a diner what has such pretty ladies and men what look like my daddy. Ma, lemme go, please," pleaded the child.

Doubtless that piteous cry went right to the mother's heart, and Smith turned to the window with a sigh.

"All I have, Baby, I'd give you, but I haven't got enough to let you eat in the diner," replied the woman. "You must eat the crackers. They're good for little girls, and you won't get a tummy ache from them. Why, if you went in the diner you might get such a pain from eating too much. You never can tell. Then, then I'd have to give you castor oil," responded the mother in a quavering voice.

The child, with the knowledge that comes with long years of denial, turned to the window, and winked back the tears that would come. Hours passed, and soon the travellers began making preparations for the night. The "flapper" brushed the banana peelings off the seat, and put her dirty satchel under her head. Then as if suddenly remembering something, she sat up, and smeared some cold cream on her face, combed her wavy hair with an ivory pocket comb, and again composed herself for sleep. Her husband removed his coat, rolled it up in a ball, put it under his head, and stretched himself out with a grunt. The Westerner put his head against a window sill and his feet in the aisle, and began snoring.

Smith sat nearer to the window, and looked out pensively. The moon which had been shining wanly a few moments previous, was now completely covered by a large, black, fleecy cloud. He could not but compare it with his own life. It had not been a bright or even joyous one, but it had had many moments of exquisite happiness. Even these were gone, shadowed, just like the pale moon, with the cloud of disaster. To feel sorry for himself never entered his mind, but for the young innocent soul, who would not know the world or its ways for many years,

it was an entirely different matter. He sighed heavily. There seemed to be a great weight tugging at his heart.

"The poor baby girl. What will she do? What will happen to her? Oh, God, that it had never happened," he cried in his heart.

He put his thin hand to his forehead as if to brush away the agonizing thoughts. He rested his head in his hands. He started up as an infant's piercing wail broke the silence.

"Ssh, Baby, daddy is right here. He's right beside you, and he'll not let anything bother you. Go back to sleep now, and daddy will hold you in his arms," whispered Smith.

He took the child in his arms. He frowned anxiously. He wondered with a start if she were ill, if anything hurt her.

"What's the matter? Tell daddy. Does anything hurt you? Ssh!" implored Smith.

Whatever might have been wrong, the nine months old baby was unable to state it to her worried father. The cry gathered strength. The last scream aroused the mother across the aisle, and she raised herself upon her elbow.

"What a wonderful nurse you make! Keep the kid quiet. You're not the only person on this car. There are others, and we want to sleep. Get me?" said she cuttingly.

"Oh! I am so sorry. Indeed I wish Baby would stop. I fear something is wrong, and thank you for saying I'm a good nurse. I suppose I am a little clumsy, but I do try awfully hard," replied Smith in a sad voice.

Another yell from the screaming infant aroused the Westerner and the Swede. For three long, wearisome days they had travelled and journeyed in dirt, in grime, in noise, and in heat. Then, after much effort, they had fallen asleep. They lay in cramped, distorted positions, but when they lost consciousness they forgot all their misery in refreshing slumber. The day's rain had cooled the atmosphere, and for the first time they had actually slept. To be aroused from their comforting rest was too much for these tired men to endure.

"Take the brat to its mother. She's the proper nurse. Where is she? I suppose she's sleeping soundly somewhere without this yelling kid. By God! Clear out of here or I'll ———," thundered the Westerner.

His eyes were bloodshot, and he waved his arms in a frenzy. He rose unsteadily, and lunged at the terrified man with the little blue bundle in his arms. For a minute Smith was petrified with terror. His pale face grew paler, his throat went dry, his heart beat maddeningly, his eyes dilated. Suddenly, however, his face regained its normal color, and as if strengthened from some unseen source, he looked at the gesticulating man with a glance full of sorrow, but with no sign of fear.

"You are right, my friend, my wife is sleeping." He swayed, and his voice broke. "And she is sleeping quietly. She sleeps with no disturb-

ance, it is true, for she sleeps in the arms of the Almighty. She lies in her coffin two cars ahead."

Smith sank back on the seat with his head buried in his hands. The baby whimpered. Perhaps she understood. A silence fell upon the angry passengers. The Westerner closed his eyes, and he thought of the little mound of sand in the desert. Ten years ago he, too, had laid his Annabelle to rest. The mother looked at her baby, and, with a start, wondered what would happen to the child if she was ever to pass on. The flapper and her husband thought of their childless home with a new rush of feeling. The Westerner was the first to speak. The anger died in his piercing, black eyes, and his gruff voice grew mild:

"Go, my friend, sit with her. I understand," and he held out his arms for the little bundle.

At those two words, "I understand," grateful tears sprang into Smith's eyes, and he gave the child to the crusty Westerner.

"God bless you," said Smith, and in a few rapid steps he had left the car.

The Westerner stood silent for a moment. He then walked silently to his seat. The baby had grown quiet, and lay looking up at him with big, shining eyes. The flapper sat opposite, and amused the child, or at least tried to, with her cheap string of glass beads. Then the Swede held up his watch chain, and the mother her diamond engagement ring. The baby rewarded these efforts by falling asleep, and her entertainers went back to their seats silently, but with a strange, warm, indescribable feeling in their hearts.

Lucille N., High School

SONNET TO —————

My thoughts at morn are always first of you,
 All day your charming self I try to please,
 The evening brings once more sweet reveries,
 And in my dreams sweet fancies do I woo.
 You first appeared to me to be quite cold,
 But when an introduction to you got—
 My blood did chill and then again ran hot;
 While your thoughts, ———, seem perfectly controlled.
 Fair maid, this unknown power do you hold,
 And fate will bid you cast for me my lot:
 There is an ocean which from sea is locked,
 And none but you can e'er this dam unfold.
 Pray! from your life all other rivers blot,
 And never let this ocean 'gain be blocked!

Herbert K. H., High School

SONNET ON MATRIMONY

Some take one step and are at once dissolved,
While others tempt it twice or more, we find;
All wed for love, or leap from impulse blind,
And each one through his fortune comes involved.
The first is he on whom love takes its hold,
Who works like dog to have his train well-bred,
(Who for their thanks complain till strength is fled)
Then lives—to see a grandchild in his fold.
There's he who marries because others do,
Treading the prints of time without a thought;
He gets divorced!—a sour battle fought—
And wreaks revenge on all men in his view.
Thus every woman ruins man or more;
And still men fall—and fall—despite their lore.

Herbert K. H., High School

ON ENJOYMENTS

Our lives may roughly be divided into periods of pleasure, pain, and sheer boredom. We live for the former, and, somehow, through the others. Our lives would swiftly terminate if denied pleasure, and yet there is no form of distinct enjoyment that is not condemned roundly by those finding happiness in other pursuits. We look with scornful glare upon the gentle joys of head-hunting, opium-eating, and murder. Yet there are those who gain a genuine satisfaction, a sublime, thrilling ecstasy from such disreputable occupations.

It would seem, and so it does seem to many people, that pure ecstasy is reached only when its result will be harmful to the doer, or to other people. Drugs, prostitution, and countless vile practices are indulged in by persons who think that in them they find the greatest type of pure joy attainable.

But it is the saint that laughs pityingly at the sophisticated sinner. The thrill of knowing God, the overcoming of temptation, the joy of attaining heights, the satisfaction of goodliness, and the pride of character overshadow by far the vain pleasures of the hour. The capacity of the good man for pleasure is unlimited. Each day his cup runneth over.

But the sinner tires of his pursuits, or becomes the slave of his passion. In the former case he finds himself with no field open for further happiness. In the latter he is broken and destroyed. The former enjoyed too much—he has nothing to fulfill his desire now; the latter has his harvesting of pain.

The happiest man is usually a good man—that is, good in the wider sense. He may not subject himself to church, charity, or reform, but if he is not a rotter, if he abides by the laws of his country and his inherited faith, is honest and moderately prosperous, he is in a fair way to gain pleasures of many varieties.

This man is not the happiest man in the world, but he is the average man, and he can be greatly satisfied with his lot if he does not meet with serious misfortune. The happiest men in the world are the men of genius, or zealous in a certain honorable faith or order. Happy, more in the sense of really attaining the ecstasy that more ignorant people seek vainly in evil.

These men, regardless of their material possessions, find exaltation in the expression of their genius, or in pursuit of their faith. Their joy is a most supreme and delicate emotion. But we of lesser greatness are denied this. Yet we too feel our spirits soar when our honest work is praised, or when, with honest heart, we can congratulate ourselves.

In finding ourselves, at this youthful age, neither to be geniuses nor yet of ordinary mould (for we cannot admit the latter until our pride is squashed by life), and finding ourselves neither built for a strenuously evil life nor built for one of piety, our greatest concern is the one of discovering our particular road to happiness.

Up to now we found pleasure in the same ways and manners. All children delight in movies, candy, and vacation. Our scope, however, has been widening. Books take the place of marbles; perhaps cigarettes will find a mouth here that teased for one more chocolate then. Athletics will be abandoned later, our girths will grow, our youths will soon be memories. What will be our enjoyments? It is now that we must build a capacity for pleasure.

If we are to enjoy travel to the utmost, now must we find the history and the significance of the places we shall cross. If art shall thrill us, now we must learn of its purpose, its past, and its exponents. If we find physical joys, our bodies now must grow strong and tall. Now let us form the vessel into which life shall pour her glory.

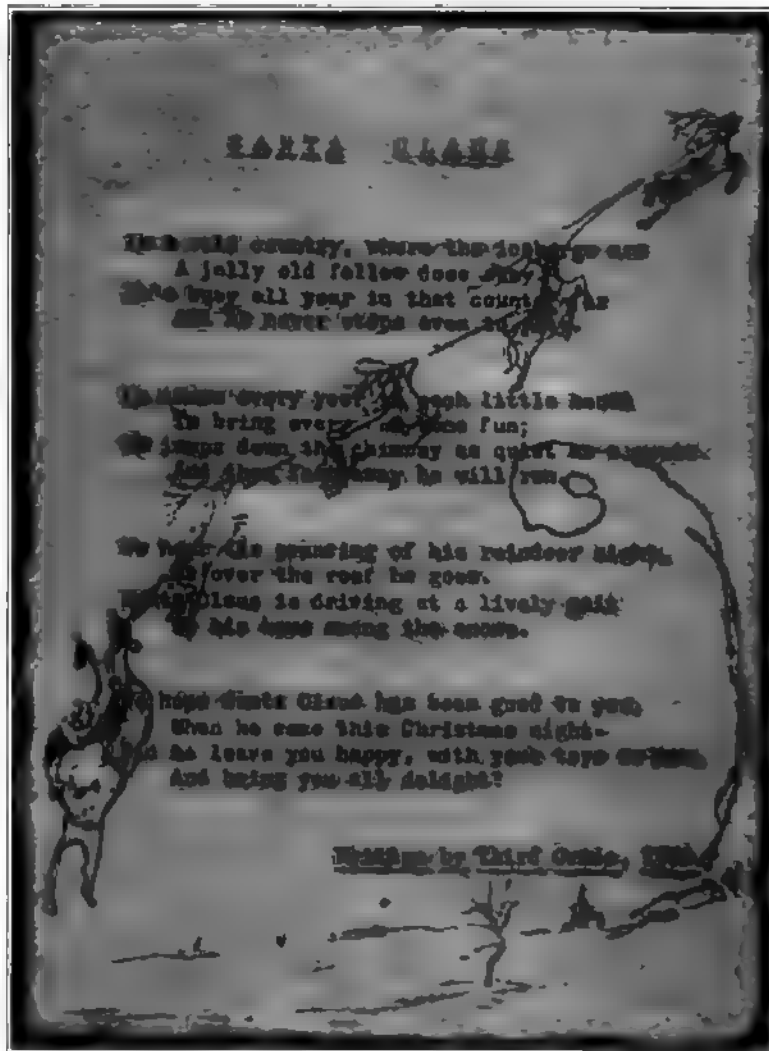
Allan B., High School

The older children, we have said, often ask for criticism. Of course, there must be criticism of a kind from the start. Technique, although subordinated, must be thoroughly taught. But children should not be asked to write for the sake of technique. Johnny will very likely enjoy trying to make you see and hear what he saw and heard that interested him. He will not be particularly eager to try to "write a vivid description," at least until his years shall have increased. On the other hand he is likely to be glad to be shown how to make what he has written more interesting or more true.

In conclusion it is safe to say two things about verbal expression, despite variance of opinion among teachers as to modes of approach and adult points-of-view. Perhaps both statements are truisms, but they are not always lived up to by the best of us.

If children are encouraged to write what they really feel, their expression will be happy and spontaneous.

If they write with a sense of freedom, much of what they write will be entertaining, and some of it will be beautiful indeed.



A Christmas Card

CREATIVE EFFORT—MOTOR-MENTAL RHYTHMICS AS A PREPARATION

EDITOR'S NOTE—*Given freedom, children will create. This we say over and over. But there is one kind of bondage which most of us are powerless to destroy, namely, the slavery of physical inhibitions. The littlest children in our school go through the experiences described in the following article. Subtly creative in themselves, these experiences are most important for their major purpose: "The child is directly aided in gaining a sound body, a sound mind, and a sound emotional nature—the ability for expression free from self-consciousness."*

Rhythm is basic in all the arts—both the interpretative and the creative—and the earlier the child's rhythmic sense is developed the better will be his foundation for both appreciation of and participation in the arts.

Old dance forms such as folk dancing are imitative, for it is impossible for the child to have the same impulses that created those forms of expression, but if without direction he acts out "Jack and Jill" or "The North Wind Doth Blow," for example, with movements appropriate to the music and the words, he is interpreting those songs. If through movement he expresses his own mood in rhythmic form, he is being creative.

The creative expression can not safely be approached directly by the teacher, but the interpretative may. When the children enter the room for Motor-Mental Rhythmics their attention is on the music, as for example it may be music that suggests skipping or running or walking, or it may be slow, sustained music without strong accents which suggests movement of the same quality such as a slow relaxation of the body beginning with the back of the neck and going through the shoulders, lower part of the back, and then one leg and then the other until the child is folded on his knees. It is not necessary that this expression should be uniform, but it should be appropriate to the music. This in a simple way is interpretative.

In a broad way the purpose of Motor-Mental Rhythmics is the harmonious development of the body, the mind, and the emotions into a unity that makes for power and conscious control. Educators have realized the necessity for physical training as well as mental training, but the two things have had little or no relation, and the element of emotion as interrelated has been almost entirely ignored. The high power stimulus of modern life is making this lack of harmony in our development very pronounced; hence the large field for psycho-analysts and psychiatrists.

The average child, through either heredity or environment, has physical inhibition that can be overcome by relaxation and correlative movements which are at first spontaneous and later are brought under control of the mind. The body is like an instrument which is a satisfying means of expression when it is in tune and mechanically in order, and most unsatisfactory when it is not. With the instrument—the body—under physical and mental control, the expression of emotion becomes a natural, wholesome outlet. This is so fundamental that it is related to all the arts. Music, being more concretely related to movement, is used as a stimulus to expression.

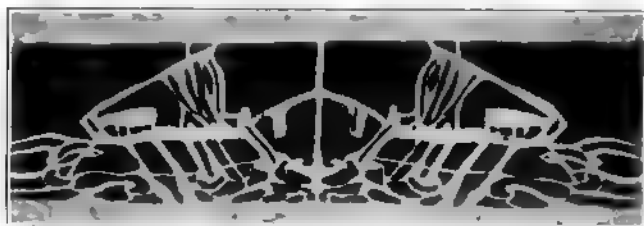
If children are to appreciate or produce music, they must first learn to live it, for rhythmic sensibility lies at the foundation of musical appreciation and execution, and is fundamental in all musical education. Motor-Mental Rhythmics aims to release and develop this organic expression of musical feeling, avoiding set forms and enforced precision, and encouraging free and individual expression. The child very early feels the relation of movement and rhythm and follows the music spontaneously through different music moods. Music that is within the child's musical experience is used, as the Mother Goose songs with the youngest children, and later the folk songs of different countries, and the simpler of the classics.

From the first the sense of pitch is developed by the elevation of the arms; first recognition of the different registers, and later the following of the simple melodies. At the same time, the ability to express notes of different duration by slow or rapid walking and running is gained, which combined with pitch, taken with the arms, gives an expression of melody and rhythm. Later the expression

of form is approached so simply and naturally that the child soon makes his own pattern for the compositions that have become so familiar that they are a part of his being.

After the child can hear and feel music and express it with his body, comes the time, and then only, for the symbols of music. In the Motor-Mental classes in the Francis W. Parker School, very little attention can be given to the teaching of music notation, for lack of time. Some attention is, however, given to the use of cards with notes of different values, with which the children arrange melodies, both original and those dictated by the piano. Charts with three octaves of the piano keyboard may be used; also large cards with the staff and notation of the melodies familiar to the children are used to train the eye, as well as the ear, to follow the line of the melody. The children are often given instruments of percussion—cymbals, drum, etc., and their instinct for making noise is released in a joyful, satisfying, and intelligent way.

Through this work the child is directly aided in gaining a sound body, a sound mind, and a sound emotional nature—the ability for expression free from self-consciousness.



Free-hand Drawing used as a Motif for Design. (See p. 109)



The Chariot of the Sun (Field Day Exercise)



CREATIVE EFFORT—IN DALCROZE EURYTHMICS

"But what shall this education be? Is any better than the old-fashioned sort which is comprehended under the name of music and gymnastic? . . . Music includes literature . . . And he who mingles music with gymnastic in the fairest proportion and best attempts them to the soul, may be rightly called the true musician and harmonist in a far higher sense than the tuner of the strings . . . And such a presiding genius will be always required in our State if the government is to last."—The Republic—Plato.

"Educationists should bear in mind that while rhythm plays a preponderant role in art, serving to unite all manifestations of beauty and animating them with the same throbbing life, it should constitute a no less important factor in general education, coordinating all the spiritual and corporal movements of the individual, and evolving in the latter a mental state in which the combined vibrations of desires and powers are associated in perfect harmony and balance. 'Only the soul can guide the body along the path the mind has traced for it'."—Rhythm, Music, and Education—Jaques-Dalcroze.

Greek life is the subject for fourth grade work. The children read from "Four Old Greeks" or from Palmer's translation of the "Odyssey." They model in clay such subjects as occur to them from their reading; they paint in the same way scenes of their own imagining, each individual choosing his own subject. These paintings are as a rule unusually good, with movement and animation strikingly in evidence. The art teacher of this grade gives the credit for this excellence in a large measure to the children's experience in Dalcroze Eurythmics, which affords them practical understanding of the movements they depict.

This is of course a fundamental requisite in any expressive work—a real feeling for rhythm or movement. An expert art



The End of the Hammer Throw

teacher will always suggest as the best aid to successful drawing the actual performance of the motion by the one who is drawing it—not just assuming the pose, if he is wise, but making the whole sequence of movements of which the pose is just one moment fixed in the memory. This expression of rhythm by means of bodily movement, which Dalcroze discovered was the most effectual approach to the study of music, is therefore seen to be fundamental to all the arts.

In order to understand this fourth grade work it will be necessary to consider the work done in the first three grades. The steps in the development of this rhythmic work may be sketchily outlined.

First comes interest in discovering a particular element in the music which is to be expressed by walking, running, skipping, clapping, in the same tempo as the music which is being improvised by the teacher. Accents are listened for in the same way, clapped when heard, and the weak beats thrown away. Listening

for the measure comes next, and when the children can hear whether the measure is two or three, they learn to beat time as an orchestra conductor does, and eventually learn all kinds of measures, beating with both arms or one.

Differences in the length of sound are heard by the child and illustrated by slow or fast steps for quarter, eighth, triplet, and sixteenth notes—by a step and one or more movements in place for the longer note values, such as half notes, dotted halves, and whole notes.

The many elements of music which a child may learn to hear and feel, expressing them in movement, can only be suggested in this enumeration, as the idea in this article is to remind the reader that music, coming from the dance originally, contains all the rhythms it is possible for a body to express. This variety sustains interest which the increasing ability to hear and express accurately develops into concentration and a much greater capacity for using the subconscious mental powers. The process of hearing, thinking,



The Fourth Movement of the Discus Throw



The Fourth Grade in a Greek Play

and acting thus initiated is the real basis of creative work, for it compels the activity of the mind and imagination as well as the body of each individual. Imitation alone can never awaken creative ability, in dancing as in the other arts.

Co-ordination of bodily movements, spontaneity of will, ability to inhibit and to economize effort, overcoming physical resistances to the rhythmic and smooth performance of bodily movements, are the results toward which all exercises are aimed. For a fuller explanation of the theory of eurythmics, the reader is urged to refer to "Music, Rhythm, and Education," by E. Jaques-Dalcroze—a collection of lectures by the great teacher and originator of Dalcroze Eurythmics.

So true it is that the best expression is obtained from children under the stimulus of interest and imagination that most rhythmic drills may be accomplished most effectually through imaginative games. Thus all feeling for different kinds of measure and note values is developed in the three primary grades through games which correlate with the children's other school work if possible.

The fourth grade children, prepared by their rhythmic experience in these grades, are keenly susceptible to music and accustomed to adapt their movements to the tempo, dynamics, and rhythms of music.

Dalcroze Eurythmics approaches as near Greek education, according to the expressed conviction of many educators, as can be conceived of in this age. (See the quotation from Plato at the beginning of this article.) A fourth grade child, reading in "Men of Old Greece," can get a very real visualization of the following:

The court was filled with boys at work. Some were throwing the disc. . . . The thrower held it in his right hand. He swung it back and forth to get a good movement. Then he threw it . . . Some

boys were jumping . . . Other boys were throwing spears at a mark . . . Some slaves sat in one corner, playing on trumpets and drums. In the court, boys were dancing to this war music. They were pretending to be warriors. They carried shields and swords. They moved forward and struck out with their swords. Then they leaped to one side and put up their shields . . . All this they did in time to the music, yet it looked almost like a real battle. It was hard work. The boys' bodies were dripping. Their eyes and cheeks glowed.—*Jennie Hall.*

This description was the inspiration of our year's work. Throwing the disc was practiced as a real Greek has taught us to do it. The music of a Sword Dance by Poldini was found to suit our purpose, and the stirring rhythm gave impulse to the rather difficult movements of the hammer throw, stone putting, and disc throwing. The entire grade practiced these games with great enthusiasm and performed them on Field Day, ending with the chariot race in honor of Apollo, which is done every year.

Another year, the Pan-Athenaic Procession was the theme of our Field Day, with only the winners of the various games taking part—the best disc throwers, runners, and jumpers, and the winners of the torch race and the chariot race.

A torch dance, in a difficult five-four measure, was one of the features of the fourth grade work one year. The dance formed part of a Greek play. All were eager to have torches for this dance, but the day before the performance arrived, and the teacher had no idea of how these torches could be made. A group of children volunteered to make them. Under the leadership of one boy, they gathered dry brush, twisting it together in the form of a torch, cutting small snips of red and orange paper for the flame, and fast-



The Fourth Grade in a Greek Play

ening these in the end of the bunch of twigs. The result was startlingly realistic and a most effective touch in the play. It also was a great lesson to the teacher, in the creative ability of children.

Music for a ball game has been composed by Jaques-Dalcroze and is often used in this Greek work; but the composition entitled "Les Chevaux," also by Dalcroze, is always the supreme test for this grade, as it demands a great amount of sustained attention, memory, and physical control. The drivers, walking the whole notes, half notes, and quarters, are always walking twice as slowly as the horses, except in one place where they are going two steps to the horses' three. There is no doubt that the difficulty of this work would be insurmountable without the stimulus of interest in the Greeks.

How is this creative work? Is it not a real effort on the part of each child to create a Greek festival? His own part is of supreme importance both in his hope of outdoing his own previous record and as his contribution to the excellence of the whole performance. Also, as each movement has significance and sequence, it is not a mere imitation or drill. The whole, unified and inspired by the rhythm and harmony of the music, makes an expression which is joyous and spontaneous, both necessary elements of true creative art.



The Fourth Grade Children in the Discus Throw

CREATIVE EFFORT--IN MELODY

(The Older Children)

Recent collections of children's work in art and in music are confirming our feeling that there is much ability in children to create in these forms which is not being discovered early enough, if at all. Creative talent great enough to demand expression for itself will usually take care of itself; but the lesser talent ought to be developed also, for the good of the individual if not for the rest of the world. Every child ought to have the opportunity to try, and in certain cases the work should go on for a considerable period. It should last long enough to permit the pupil to work through that first superficial layer of largely-imitative melodies which occur to almost everyone (the present collection and most others I have seen are of this sort), and go on from there to genuine creative work in the presumably rare cases when that is possible. We believe that if a pupil has the necessary leisure, and the right kind of stimulation and help, he may discover for himself a whole new range of power and joy in this work.

We select the children for this experiment for various reasons, not always because they ardently desire it. They often desire it when they have no power at all to shape a single phrase. Obviously the child who is very musical should have the first opportunity, but there are less obvious reasons governing the selection of other children, which it would be difficult to state in detail. A series of typical examples would be necessary to show our ideas on this point.

The process must be really free. Most of the instruction should come incidentally out of the pupil's own felt need of it, and instruction must never interfere with the joy of free expression. There is one current method of doing this work which we believe prevents free expression in all children, and that is the method of mechanically building up tunes phrase by phrase under direction and criticism.

If our children saw frequently great architecture, paintings, and sculpture, and heard only the best music, and if they came into contact with great teachers and preachers and noteworthy person-

alities, they would have a content for self-expression which might eventuate in a thousand beautiful forms. As it is, we must help them to express what they want to express. Whatever the content, it is surely true that until they have had both of these opportunities in full measure, to experience and to express, they have not had the chance of acquiring what Colonel Parker calls "that which is noblest in a human being—the impelling power to action. In all action under motive the will is brought into continuous exercise."*

The steps in the development of self-criticism which lead to the establishment of a personal standard of judgment and taste come naturally in original work. Self-criticism leads to self-discipline and the deeper action of the will to create. But skill must keep pace with the critical faculty, and we hope to aid in supplying the stimulus and the beginning of technique for a genuine, clear-headed desire for self-expression. In order to do this in the best way we should have in the music department a real composer who would carry the work far enough to get results which would be satisfying to the pupil. I do not wish to indicate that pupils do not care for their tunes at present. They do—often intensely.

The original songs which follow, written chiefly by children of the upper grades, are printed now for the purpose of showing the best of the results of opportunities for easy self-expression as they have been supplied in our school for many years. These little songs show some background of musical taste, and they exhibit musical imagery called up spontaneously by poetry under motive. The process is a very simple one. Almost no instruction in either musical or poetic form is given. We start the idea of composing only when there is some reason for the pupil's wanting to compose. May Day has always been our special time for original poems and songs, and each year in March our teachers begin talking about it with the pupils. They are given a little booklet of texts suitable for songs, including a very considerable variety. Three "prize poems" of former May Days, written by children, are included, together with other simple and more or less obvious spring poems; there are texts for songs for boys, Christmas songs, beautiful English and German lyrics, ethical poems, nonsense rhymes, etc. Two or three pupils work at a time with a teacher in the group room, or they may find a corner where they may work alone; sometimes

*"Talks on Pedagogics," p. 227.

they think out the tune at home. The melodies are written upon the board and sung by the class, and the interpretation worked out with the help of the teacher, subject to the choice of the "composer." They are only then criticized in detail by the composer and the class. Such suggestions as seem useful are added by the teacher, especially as to form, but there is absolutely no interference in matters of taste. The song represents the pupil's taste as far as we can find it out. In regard to the accompaniment, if the pupil has no skill and no ideas at all on the subject, various possibilities are suggested to him and harmonies chosen by him.

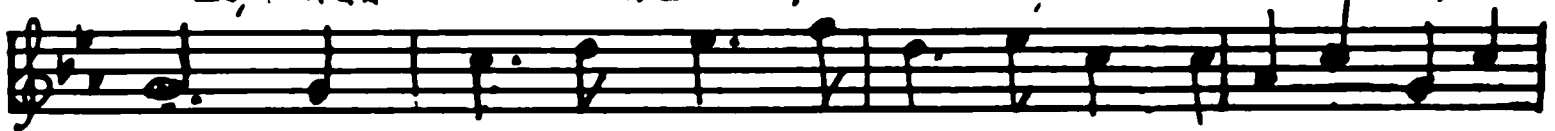
School Song.

William Morris.

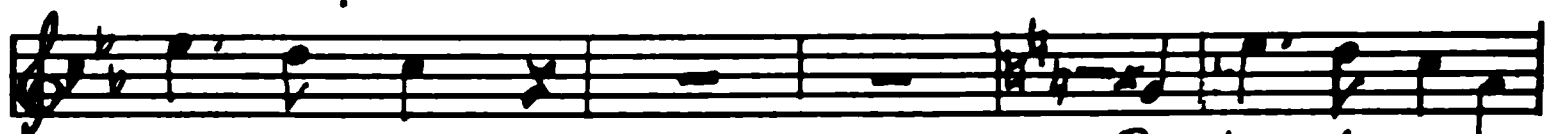
R. L., 9th Grade Boy.



Lo, when we wade The Tangled wood, In haste and hurry, to be

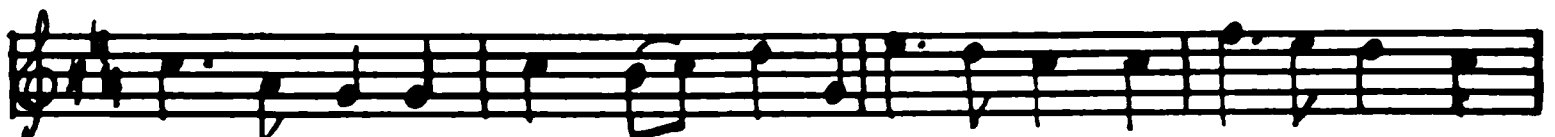


There, Nought seem its leaves and blossoms good, For all that they be



fashioned fair,

But look-ing up, at



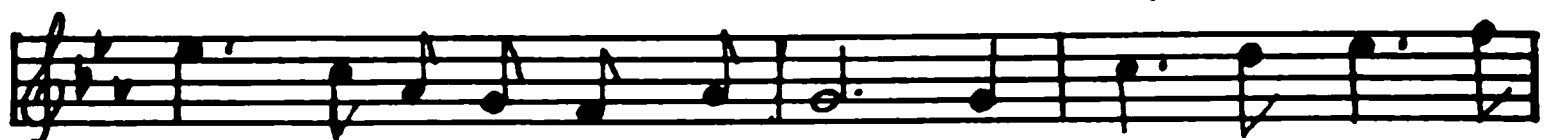
last we see The glim-mer of the open light, From o'er the place where



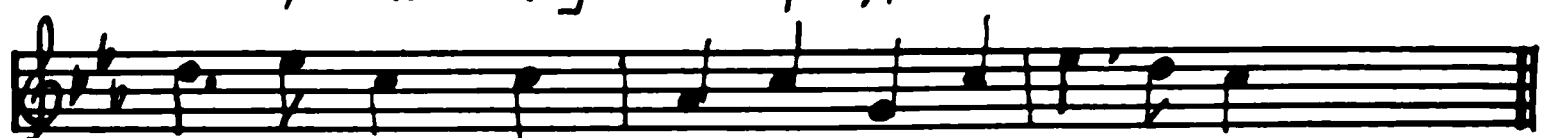
we would be; Then grow the very brambles bright.



So now amidst our day of strife, With



many a mat-ter glad we play, When once we see the



light of life Glean thro the Tangle of To-day.

Robert was from Boston. He selected the poem for his text at home, and brought the melody complete, and neatly written down. His feeling of seriousness about the school's ideals was unusual. The melody has good form and is appropriate to the text, if not very interesting.

Hellas

VIRGINIA WAGNER - Fourth Grade

Group Fourth Grade 1908-9

Andante

Oh! I'm think-ing of Hellas Of far - a - way Hellas, Where the
 -Oh! I'm think-ing of Hellas Of far - a - way Hellas, Where the

p

green fields are ly - ing Where the sun-light is dy - ing, O'er the far stretch-ing
 cat - tle are low - ing Where the wat - ers are flow - ing, On the wide sun - light

Last ending
pp

fields of my Hel - las ——— My far. a way Hel - las.
 fields of my Hel - las ———

pp

Fairies' Spinning Song

CONSTANCE Mac KAYE

Fourth Grade 1910-11

Andante

Twirl and turn, twirl and turn, Thistlekin Flittermouse Seed o' fern

Wondrous the gar - ment we pre - pare, Fit for a true prin - cess to wear;

Gold-en the thread on the spin-dle flies, Pearly the tears of Ros-a-dew's eyes

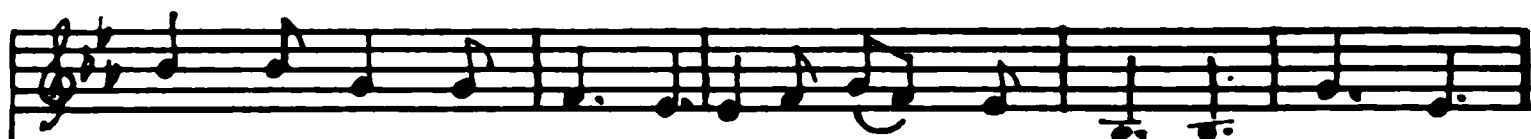
Twirl and turn, twirl and turn, Thistlekin Flitt-er-mouse Seed o' fern.

Rudyard Kipling. *The Merchantmen.*

7th & 8th Grade Boys.



Coast-wise, cross-sea, round the world and back again,



Where the flaw shall fail us, or the full Trade suits. Plain sail,



Storm-sail, Lay your board and tack a-gain, And



That's the way we'll pay Paddy Doyle for his boots.



Sea Song.

Allan Cunningham.

Five Boys, 9th Grade

A wet sheet, and a flowing sea, A wind that follows fast, And

The first system of musical notation for the song. It consists of a vocal line on a single staff and a piano accompaniment on a grand staff (treble and bass clefs). The key signature has one sharp (F#), and the time signature is 2/4. The vocal line begins with a treble clef and a key signature of one sharp. The lyrics are written below the vocal staff.

fills the white and rustling sail, And bends the gallant mast, And

The second system of musical notation. It continues the vocal line and piano accompaniment from the first system. The lyrics are written below the vocal staff.

bends the gal-lant mast, my boys, While like the eagle free, A-

The third system of musical notation. It continues the vocal line and piano accompaniment. The lyrics are written below the vocal staff.

way The good ship flies, and leaves Old England on the lee.

The fourth and final system of musical notation on this page. It concludes the vocal line and piano accompaniment. The lyrics are written below the vocal staff.

Two Songs for the Little Children

Northerly I.

Old English.

Three 9th Grade Girls

When the wind is east, They say We shall have a rainy day.

This musical score is for a song in G major (one sharp) and 4/4 time. It features a vocal melody on a single staff and a piano accompaniment on a grand staff (treble and bass clefs). The melody consists of eighth and quarter notes, while the piano part provides a harmonic foundation with chords and moving lines in both hands.

When The wind is from the west, Moving fields have little rest.

This musical score continues the song 'Northerly I' in G major and 4/4 time. It follows the same format with a vocal melody and piano accompaniment. The melody includes some eighth-note patterns, and the piano part continues with harmonic support.

Northerly II.

D.P., 9th Grade Girl.

When The wind is east They say, We may have a rainy day,

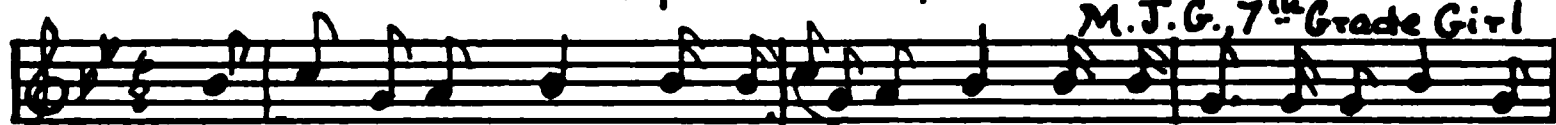
This musical score is for a song in G major and 2/4 time. It features a vocal melody on a single staff and a piano accompaniment on a grand staff. The tempo is faster than the first song, indicated by the 2/4 time signature. The melody uses more eighth and sixteenth notes, and the piano part has a more active accompaniment.

When The wind is from the west, Moving fields have little rest.

This musical score continues the song 'Northerly II' in G major and 2/4 time. It includes vocal melody and piano accompaniment. The melody features triplet markings (indicated by a '3' over a group of notes) in the final phrase, adding a rhythmic flourish.

A Capital Ship.

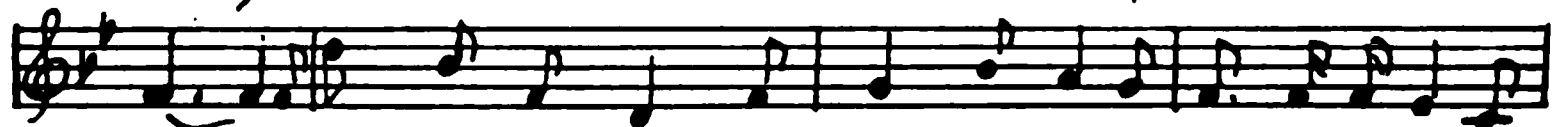
M.J.G., 7th Grade Girl



A cap-i-tal ship for an o-cean trip was the "Walloping Windows."



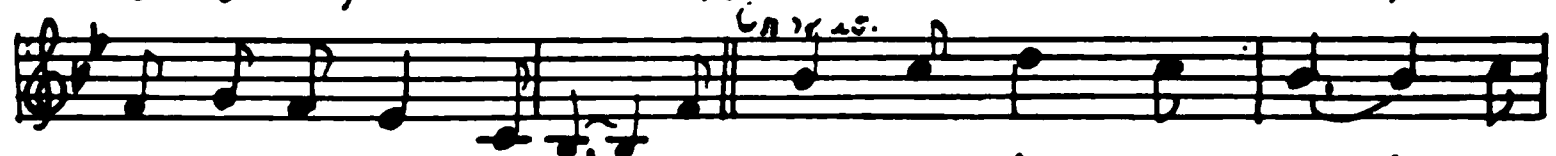
blind; No wind that blew dis-mayed her crew, Or Troubled the captain's



mind. The man at the wheel was made to feel Contempt for the wildest



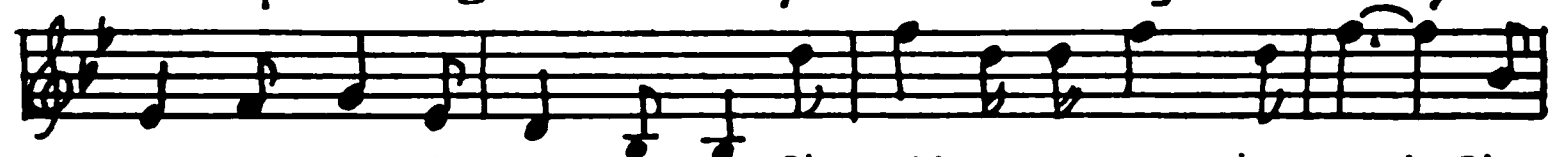
blow-ow-ow, Tho' it of-ten appeared, when the gale had cleared, That he'd



been in his bunk below. Then blow ye winds heigh-ho! A-



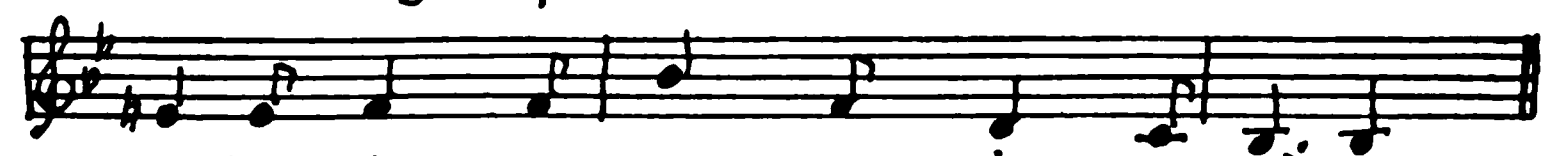
roving I will go! I'll stay no more on England's shore, So



let the music play-ay-ay. I'm off for the morning train, I'll



cross the rag-ing main, I'm off to my love with a



boxing glove, Ten thousand miles a way.

Buccaneer's Song.

R.B., 9th Grade Boy

moderato

Greet ye the morn-ing, laugh her up, And sing the sun below, For its

The first system of musical notation for the song. It consists of a vocal line and a piano accompaniment. The vocal line is in treble clef with a key signature of two flats (B-flat and E-flat) and a 4/4 time signature. The piano accompaniment is in bass clef. The lyrics are written below the vocal line.

out wi-me to the Car-ib sea, Where the scented east winds blow. Oh the

The second system of musical notation. It continues the vocal line and piano accompaniment from the first system. The lyrics are written below the vocal line.

day is new, and the gal-leons few, That cling to the desp'rate rendezvous. We

The third system of musical notation. It continues the vocal line and piano accompaniment. The lyrics are written below the vocal line.

know we know, — So

The fourth system of musical notation. It concludes the vocal line and piano accompaniment. The lyrics are written below the vocal line. The system ends with a double bar line.

lay your ling'ring steel a-way, And sea-men be for another day, For an-

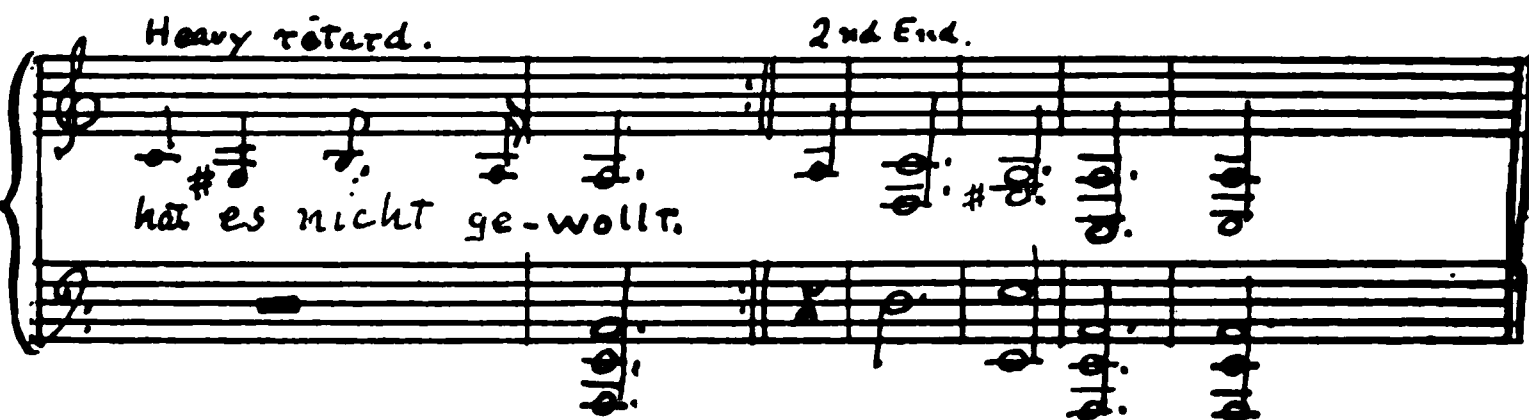
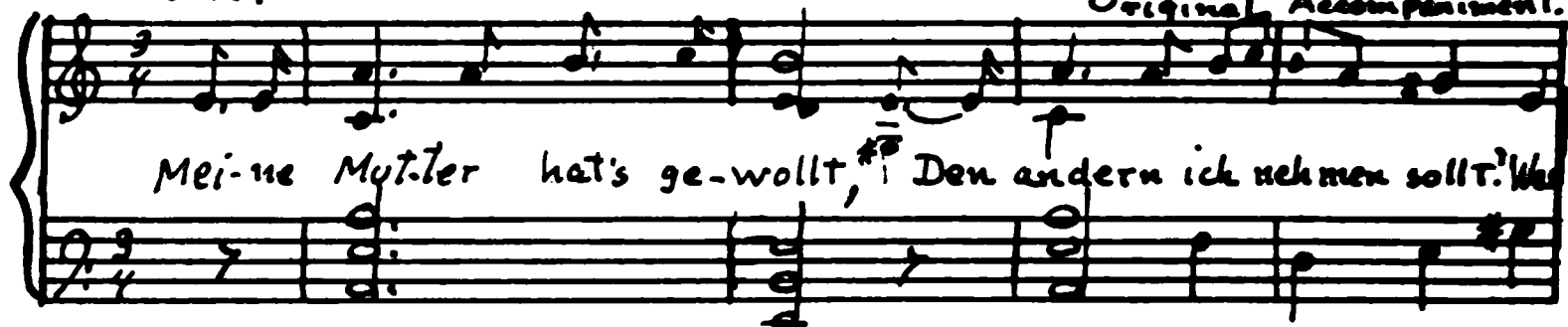
oth-er sun, and our goal is won, Out on The CaribTh Sea.

In the effort to give the boys the necessary courage to try to write a melody, the teacher discussed the differences between the speaking and singing voice, and read the text. The first phrase of the song was taken by Richard from his observation of the speech melody as the teacher read the words. Interest mounted steadily after that, and he finished the song with blazing eyes and red cheeks, twenty minutes after dismissal time.

Storm.

Meine Mutter Hat's Gewollt

J.E. 11th Grade Boy
Original Accompaniment.

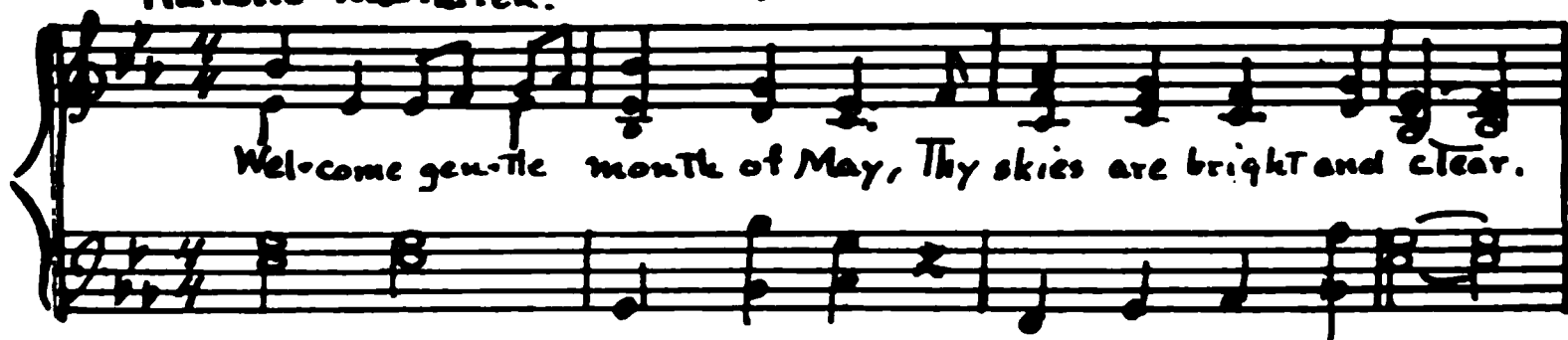


This is characteristic of the boy's feeling at the time he wrote it. He and another musical boy were deeply interested in "Immensee." This song was written to be played in one of a series of three dialogues which the two boys devised for morning exercises. They represented an aspiring young violinist (Joseph E.) and a famous musician and critic (Alfred F.). The young man is supposed to come for lessons, and for criticism of his first composition. He plays the melody on his violin, expressly stating that it has been written as an illustration of the essential feeling of the text, rather than as a song to be sung. The accompaniment is printed exactly as Joseph wrote it.

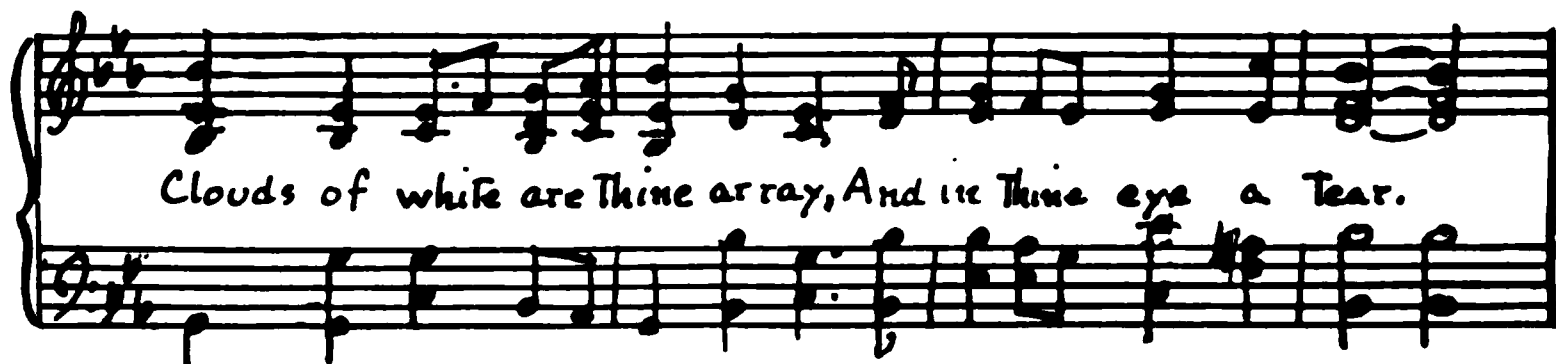
Natalie MacFarren.

May.

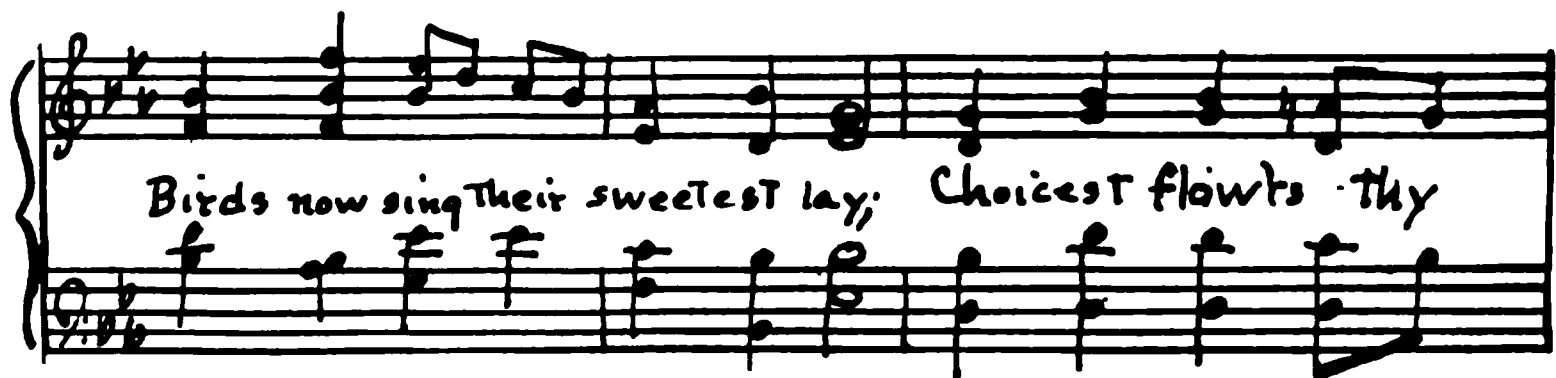
B.D., 7th Grade Girl



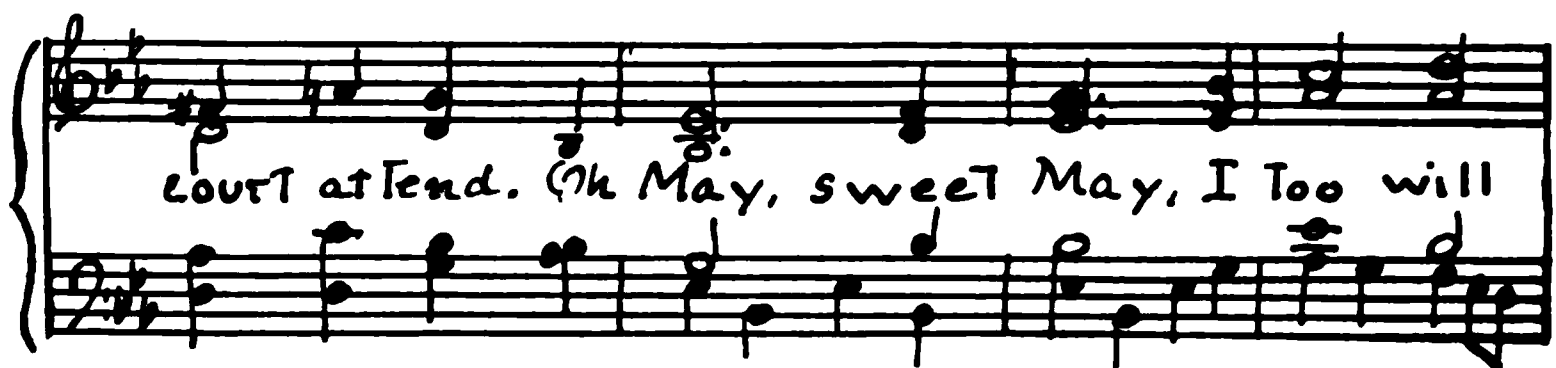
Wel-come gen-tle month of May, Thy skies are bright and clear.



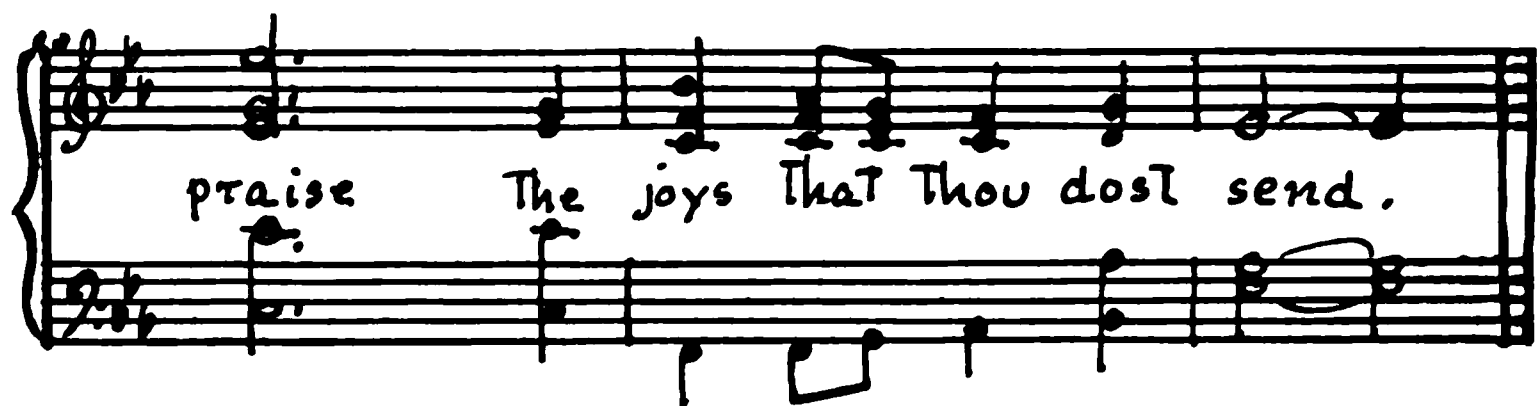
Clouds of white are thine array, And in thine eye a Tear.



Birds now sing their sweetest lay; Choicest flowers thy



court attend. Oh May, sweet May, I too will

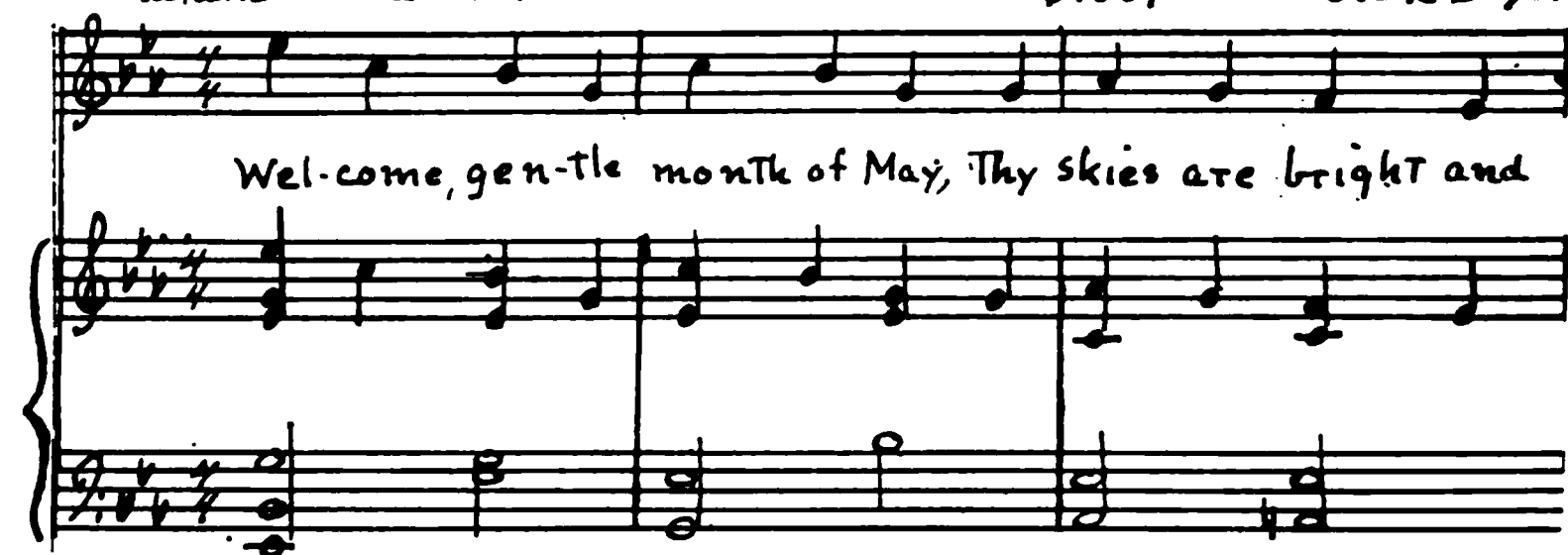


praise The joys that Thou dost send.

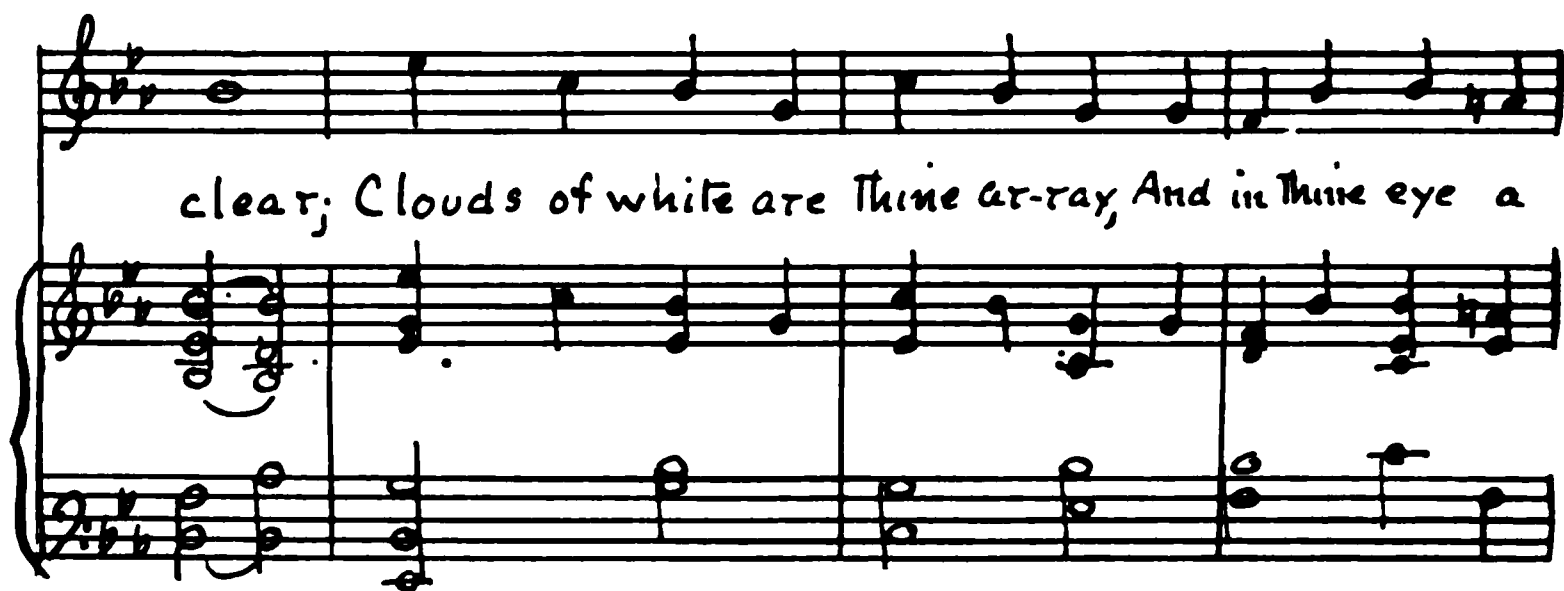
May

Natalie MacFarren.

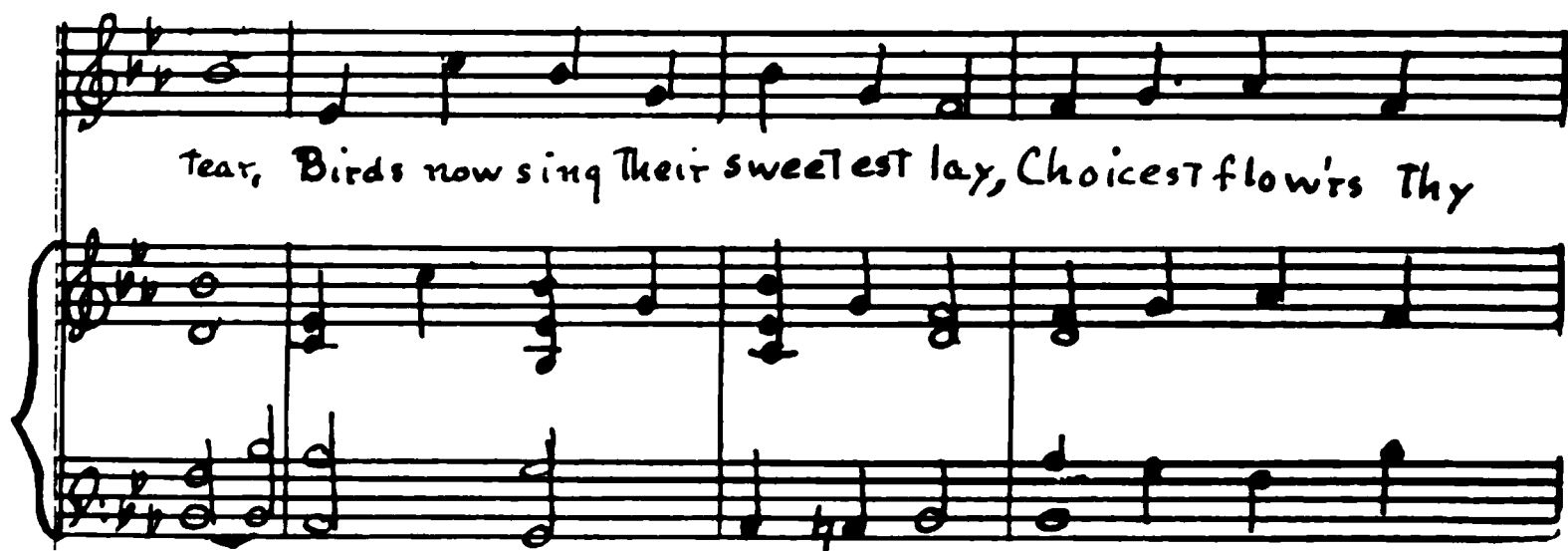
Group of 5th Grade Boys.



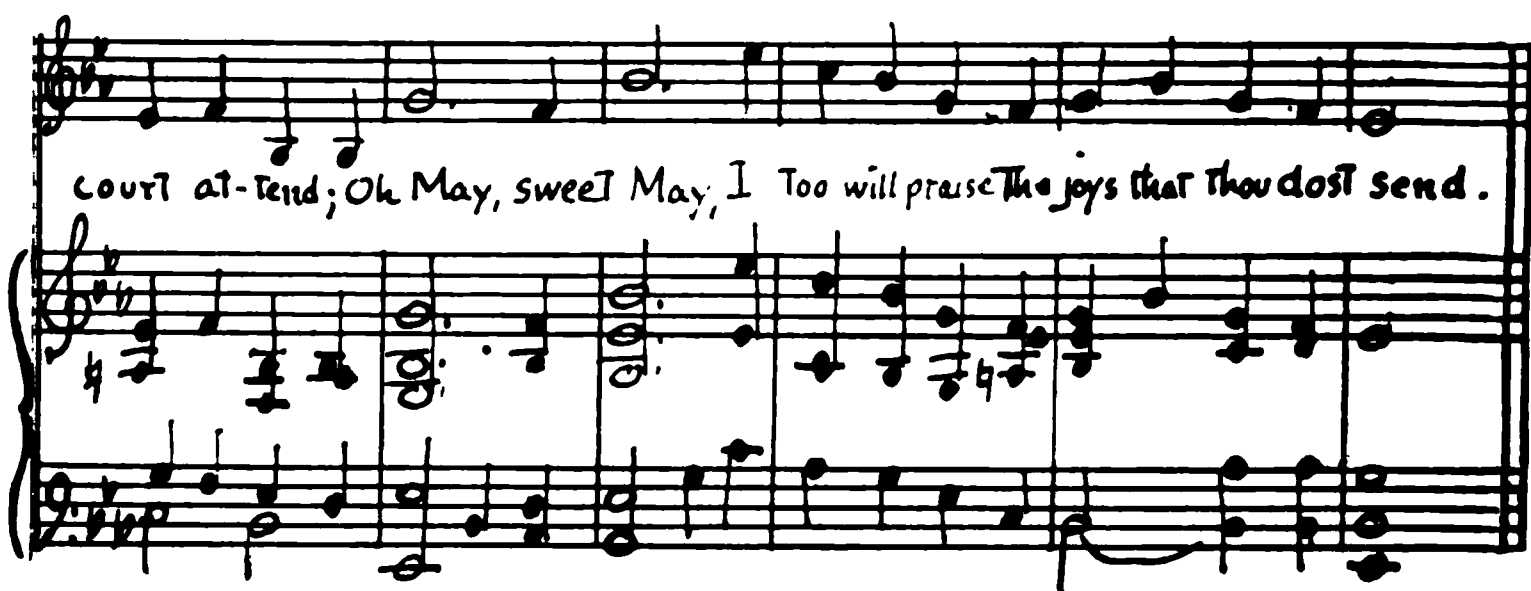
Wel-come, gen-tle month of May, Thy skies are bright and



clear; Clouds of white are Thine ar-ray, And in Thine eye a



tear, Birds now sing their sweetest lay, Choicest flow'rs Thy



court at-tend; Oh May, sweet May, I Too will praise the joys that Thou dost send.

Natalie Mac Farren.
moderate

May

R.N., 9th Grade Girl.

First system of musical notation. The vocal line (treble clef) begins with a whole rest, followed by a half note G4, a quarter note A4, a quarter note B4, a quarter note C5, a quarter note B4, a quarter note A4, a quarter note G4, and a half note F#4. The piano accompaniment (grand staff) starts with a mezzo-forte (mf) dynamic. The right hand plays a series of ascending eighth notes: G4, A4, B4, C5, B4, A4, G4, F#4. The left hand plays a series of descending eighth notes: F#4, E4, D4, C4, B3, A3, G3, F#3.

Welcome, gentle month of May, Thy

Second system of musical notation. The vocal line continues with a half note E4, a quarter note D4, a quarter note C4, a quarter note B3, a quarter note A3, a quarter note G3, a quarter note F#3, and a half note E3. The piano accompaniment continues with the same eighth-note patterns. The lyrics "skies are bright and clear; Clouds of white are thine array, And" are written below the vocal line.

skies are bright and clear; Clouds of white are thine array, And

Third system of musical notation. The vocal line continues with a half note D3, a quarter note C3, a quarter note B2, a quarter note A2, a quarter note G2, a quarter note F#2, a quarter note E2, and a half note D2. The piano accompaniment continues with the same eighth-note patterns. The lyrics "in thine eye a Tear, Clouds of white are thine array, And" are written below the vocal line.

in thine eye a Tear, Clouds of white are thine array, And

Fourth system of musical notation. The vocal line continues with a half note C2, a quarter note B1, a quarter note A1, a quarter note G1, a quarter note F#1, a quarter note E1, a quarter note D1, and a half note C1. The piano accompaniment continues with the same eighth-note patterns. The lyrics "in thine eye a Tear." are written below the vocal line.

in thine eye a Tear.

For a Play.

Original.

Group of 5th and 6th Grade Girls

What shall I see, if ever I stray Over The fields and

far a-way? Birds and flowers, castles and towers,

Beau-tiful la-dies, all merry and gay.

Walter de la Mare

A Horse man.

Four 8th Grade Girls.

I heard a horse-man ride o-ver the hill, The moon shone clear and

The first system of musical notation for the song 'A Horse man.' It consists of two staves. The top staff is in treble clef and the bottom staff is in bass clef. The key signature has two sharps (F# and C#). The melody is written on the top staff, and the accompaniment is on the bottom staff. The lyrics are written below the staves.

night was still, His helm was silver and pale was he, And

The second system of musical notation. It continues the melody and accompaniment from the first system. The lyrics are written below the staves.

horse he rode, And the horse he rode was of i-vo-ry.

The third system of musical notation. It concludes the song. Above the staves, there is a dynamic marking 'pp cresc.' at the beginning and 'f' further along, indicating a crescendo. The lyrics are written below the staves.

Masefield. *Sea Fever.* Three 9th Grade Girls

mf
I must go down to the sea again, To the lone-ly sea and sky, And

all I ask is a Tall ship, And a star to steer her by; And the

wheel's kick and the wind's song, And the white sails shaking, And the

gray mist on the sea's face, And the gray dawn breaking.

The girls at first thought that their song should be sung in a quiet, somewhat meditative style; but more variety developed after they had heard the class sing it a few times. They worked up an energetic rhythmic feeling, a crescendo in the third line, and a decrescendo in the last one, ending in a quiet, smooth way.

Windy Nights

R.L. Stevenson

D.E., 11th Grade Girl.

p *fast*

When-ev-er the moon and stars are set, When-ev-er the wind is

high, *f*

All night? long in the dark and wet A man goes riding

p

late in the night when the fires are out, Why does he gallop and

f

gallop about? Why does he gallop and gallop about?

Song for May Day.

A.S. *moderate* A.S., 11th Grade Girl.

Far, far fled in - To the deep, Deep en - charmed realms of
 snow and ice, Fast, fast fled her tryst to keep, Winter sped into an
 oth - er land, Soon in her wake came a maiden fair
 Fairest of nature's lovely chil - dren, Gently she came to slum - b'ring
 flow' - rets fair, Kissed life and bloom into each lit - tle heart.
 Light - ly she danced o'er the gar - ren earth,
 Earth wrapped in win - try cloak of sad - ness;
 Soft and caressing she gave it birth, For she was immortal
 Spring!

Annette accomplished this just after she had heard the Russian Opera Company sing the "The Snow Maiden." Annette is musical, but almost too eager to please the class; hence the popular quality of the melody. It is characteristic of her in other respects. She wrote a rather good accompaniment for it.

Two gifted pupils of the high school have written their first songs for our May Day. They are so far beyond any ordinary childish melody-making that they are not representative of school work, and so do not belong in a collection of this sort.

There are in these little songs time-worn modulations, conventional musical figures, and popular emotional colorings and mannerisms. Originality is of course rare. However, in "Hellas" there is true creative power. There were the wonderful activities of a year of work on the life of Greece under Jennie Hall, and the immediate need of a song for the slave to sing in the play. The text of the song was written by one member of the group at home, and the melody by about ten children working together. They were not the most musical ones, but a group selected because they were stirred by the verses and the situation. They were vague, hesitant, but very serious. The teacher wrote down the little song, phrase by phrase, as they sang it to her. They were totally unaware of its real quality, which only came out when sung by a musical little girl with a delicate elegiac quality in her voice.

The attention of teachers who are not used to analyzing the meaning and feeling of music is called to the following points in "Hellas."

- a.* The initial phrase has true feeling for the speech melody of the words, with the natural accentuation of the words preserved perfectly.
- b.* The second phrase gives the intensification suggested by the words, and the exactly right rhythm.
- c* and *d.* together. These two phrases are charmingly expressive of the longing in the words. Notice the fall of the melodic line at the end of *d.*
- e.* The repetition of the tones at "far stretching fields" is very expressive, and the whole last phrase forms a close that is most musical and appropriate.

The little tune has complete coherence, and it fits perfectly the dramatic situation for which it was composed.

In "The Buccaneer" we have musical ideas very adequately if not very beautifully expressed; in "Twirl and Turn" there is grace and appropriateness; "Lo, When We Wade the Tangled Wood" is a remarkably serious effort, with true if not very original musical feeling for the text; "Yo Ho, Ye Lusty Winds" and "The Merchantman" have good, vigorous, boyish rhythm and musical ideas.

The difficulty of finding good texts is great, and we use the same one as often as we like. The chief values of this work in the pupil's education are probably three: namely, the opportunity

to express musical ideas and feeling under strong motive, the discovery and clarification of vague musical imagery, and pleasure in the appreciation of others; in short, the interest of creation, however crude. There are also various bi-products which are all more or less important; as, for instance, sight reading and dictation, the proper use of musical terms, definite attention to appropriateness of rhythm, melodic line, key and key changes, and vital matters of form and taste.

It is, I presume, unnecessary to state that the songs which are presented here are intended merely to show the results of our experiments under a variety of conditions. With the exception of "The Buccaneer," which proved a popular song for older boys, and the songs for the third grade play, we have never sung any of them in the school after the occasion has passed for which they were written.

CREATIVE EFFORT—IN MELODY

(The Younger Children)

The younger children create melodies for the joy of singing a poem they have made or read. The song they make is always a spontaneous expression of something that comes from a rich background, usually in their grade or group work, sometimes in their home experience. Some children in the class have more initiative than others, some more musical ideas; but those who have musical ideas are not always able to express them. The songs are written on the board by the teacher. Very often one child sings a complete tune, and again many children sing different tunes for the same phrase. Since the whole class have the same motive or interest in making the song, the whole class take part in accepting, rejecting, or criticising the tune. Sometimes the whole tune is rejected; sometimes a few phrases will sound well or seem to the children to express the feeling of the poem. With these phrases, which are saved for another lesson, we begin to create another melody. Very often an unmusical child is so filled with the idea of making a tune for his grade play and becomes so enthusiastic that he suddenly sings a phrase which is immediately accepted by the group.

Such creative work is done in all the lower grades whenever an occasion arises.

A second grade had read the story of the early herdsmen. The people were leaving the pits in the valley where they had spent the winter and were going with the flocks to the foothills for summer feeding. When it became hard for the people to keep together along the road, the leader, Many-dogs, to encourage them, would often beat on his drum or sing:

"We are going to the foothills,
We are going to the foothills.
That is a good place to dwell."

The people following him answer:

"Yes, we are going to the foothills,
We are going to the foothills.
That is a good place to dwell.
Yes, we have turned our backs to the dark valley.
We have turned our faces to the light."

The children were so impressed by the rhythm and appropriateness of these words that they wanted to sing them. One child sang this complete tune:

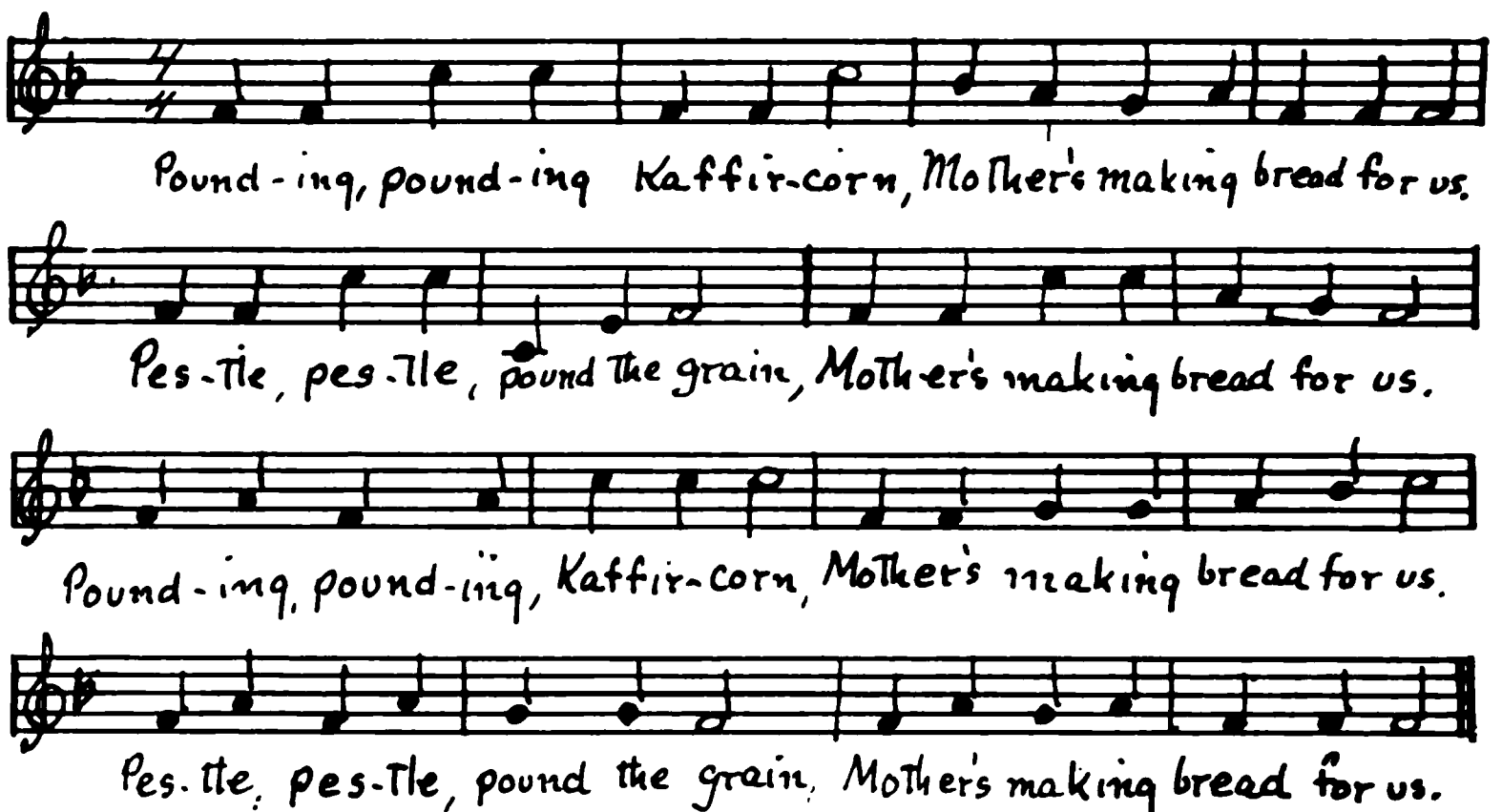


The image shows a handwritten musical score on four staves. The notation is in treble clef with a key signature of one flat (B-flat) and a 2/4 time signature. The melody is simple, using mostly quarter and eighth notes. The lyrics are written below the notes in a cursive, handwritten style.

We are going To The foot hills, We are going To The
foot hills, That is a good place To dwell,
Yes, we are go-ing To the foot-hills, we are go-ing To the
foot hills, That is a good place To dwell,

The children immediately suggested that the whole group repeat the tune, just as the followers of Many-dogs did.

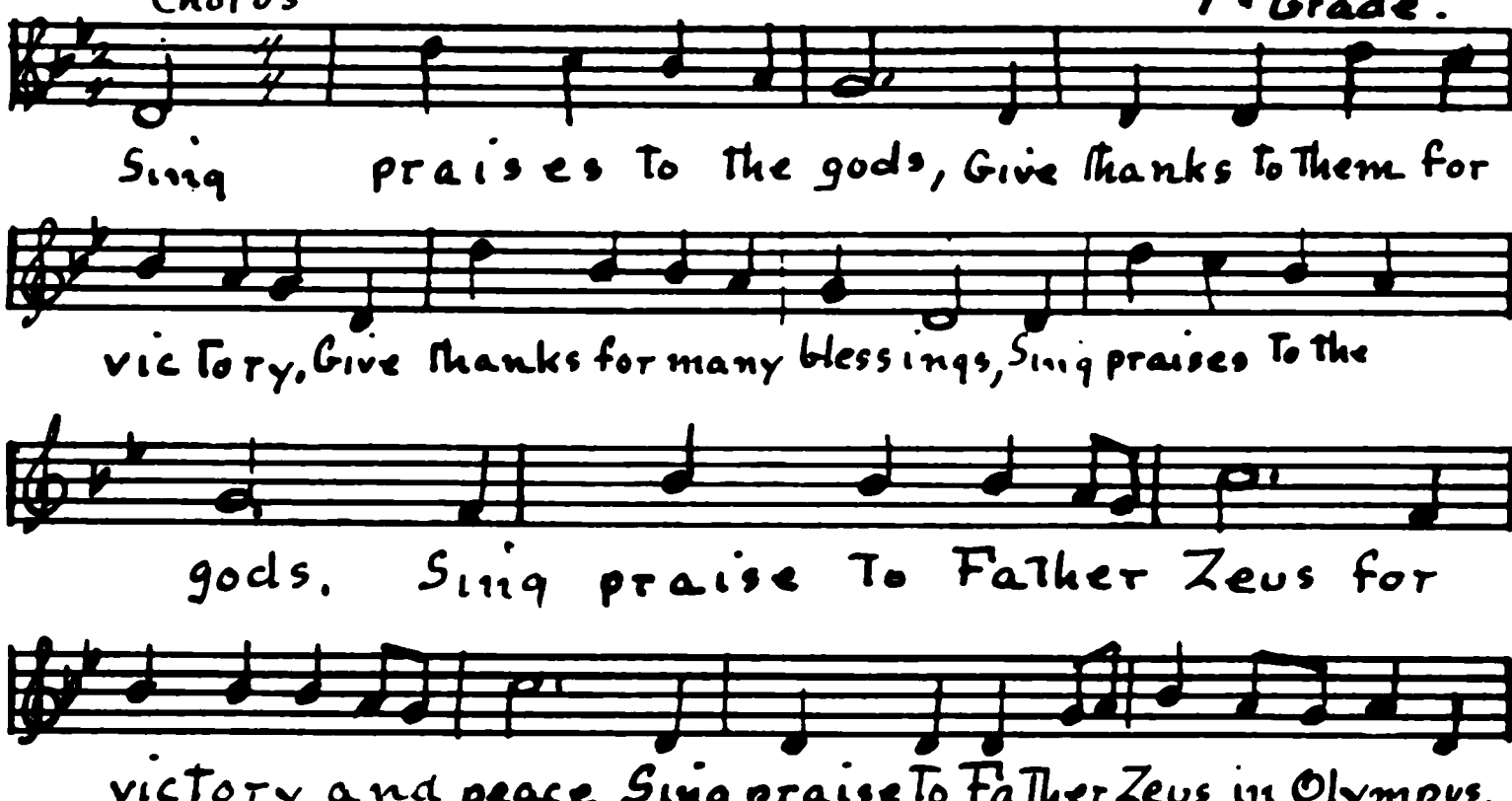
At another time this same group was making flour, using a mortar and pestle which they had made themselves. When the pestle was pounded into the big mortar (a large log hollowed out), a thrilling sound was made. The rhythm suggested the words, and as different children took turns swinging the pestle, spontaneously they began to sing. The steady pounding suggested a repetition of the same phrases, with not so much variety of tune.



The fourth grade children had been reading "Men of Old Greece," and were stirred by Miss Hall's story of the battle of Salamis. An unused table in the room, and clay, suggested to them that they make the setting for the battle of Salamis. Quickly with rocks and clay they built up the mainland, with the Persians about Xerxes overlooking the sea, where between Salamis and the mainland lay the Greek and Persian ships. On Salamis were put the Greek friends and sympathizers. The making and painting of the Greek and Persian ships was fascinating work. Then, without organization or preconceived plans, children took the part of Themistocles, Greek captains, Aristides, and began half to dramatize with the stage settings, half to talk and imagine the scenes. It had vitality; they enjoyed it. Then some one said, "Let's choose and write parts and really play it." This they did. At the end of the play a little girl said that she could write a hymn of victory that the Greeks could shout aloud as Xerxes was driven off. Two other

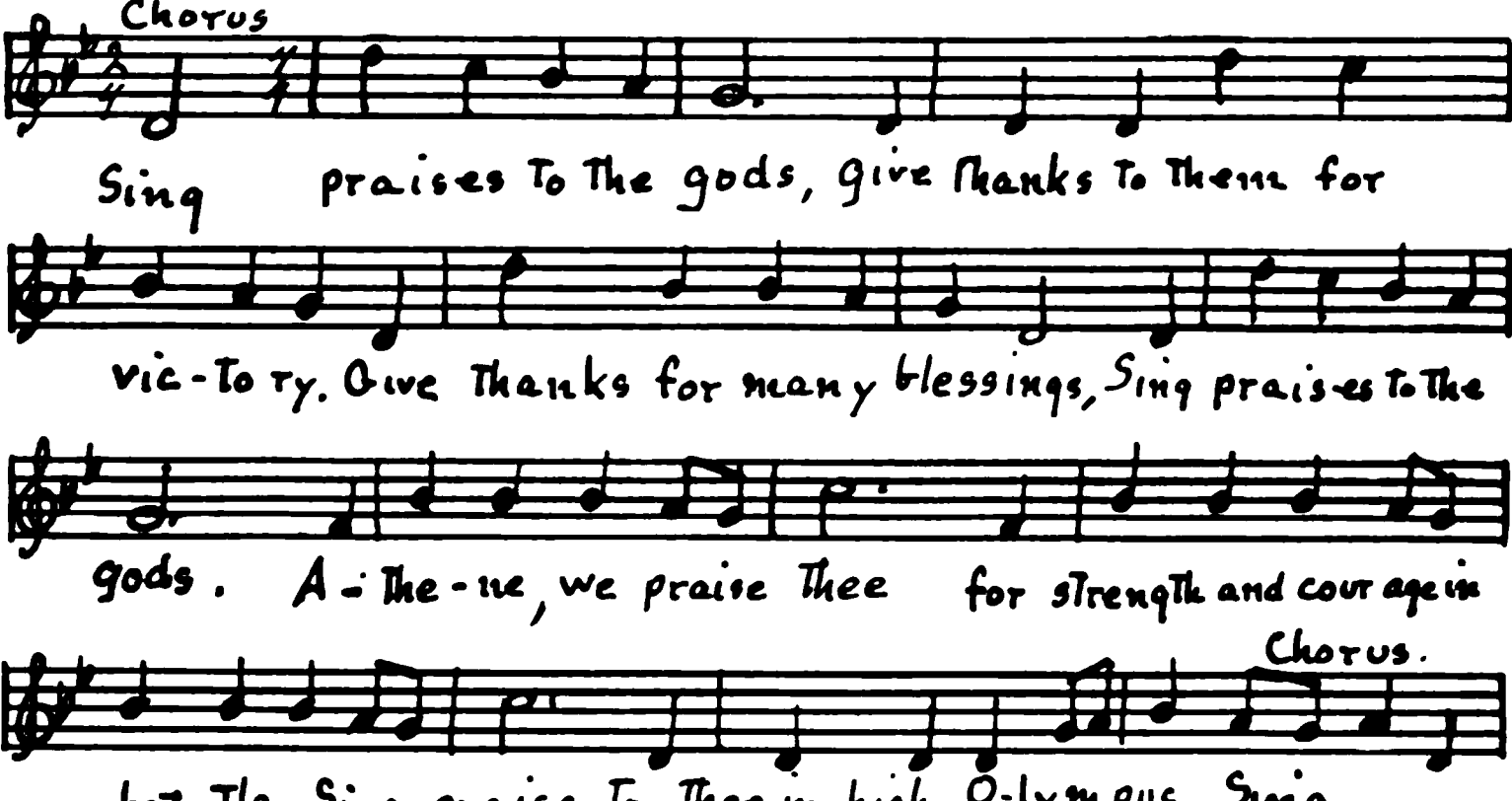
little girls liked the idea. The next day three poems came in. One of these was more lyric than the others. This the whole class wanted to set to music.

Chorus 4th Grade.



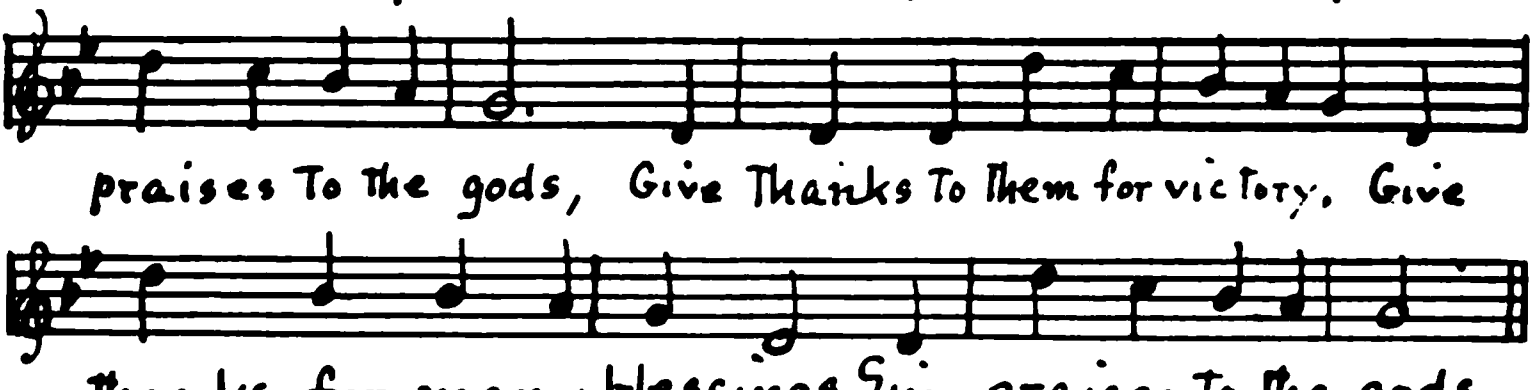
Sing praises To the gods, Give Thanks To Them for
 vic Tory, Give Thanks for many blessings, Sing praises To the
 gods. Sing praise To Father Zeus for
 victory and peace. Sing praise To Father Zeus in Olympus.

Chorus



Sing praises To the gods, Give Thanks To Them for
 vic-To ry. Give Thanks for many blessings, Sing praises To the
 gods. A - The - ne, we praise Thee for strength and courage in
 bat-Tle. Sing praise To Thee in high O-lympus, Sing

Chorus.



praises To the gods, Give Thanks To Them for victory, Give
 thanks for many blessings, Sing praises To the gods.

CREATIVE EFFORT—DRAMATIZING MOTHER GOOSE RHYMES

Impersonation and acting, story-telling and play-making, are instinctive in children, and each year the significance of the dramatic urge is more appreciated by teachers, and more widely and intelligently used in the education of young people. It is not a case of introducing something new into the schools. The dramatic instinct entered the door with the child, and can no more be excluded and ignored than can the child's hands and feet. This dramatic tendency, rightly used, has a large place in the development of the human capacities. It is indissolubly connected with the exercise and the functioning of the creative imagination.

The utilization of the dramatic tendency in the teaching of literature should begin in the kindergarten and continue throughout the child's literary journey. It is not the writer's purpose to discuss here the psychology of the dramatic instinct.* His object is to tell briefly how he has utilized some of the "Mother Goose" rhymes in the direction and cultivation of the dramatic tendency in children, and in the fostering of their play-making tendencies, "Mother Goose" has been chosen because these rhymes and jingles comprise the first literary units that come into the child's literary experience, and because the dramatic tendency at this early period of the child's development has had little chance for contamination through misuse and misdirection. There is neither time nor need in this article to go into the merits of "Mother Goose," to expatiate upon the place held by these little gems of versification, these glimpses into life, these (in many cases) well nigh perfect examples of art. Where does one get a deeper, more terse bit of philosophical comment than "Humpty Dumpty?" A single mistake, one downfall, and no human aid—not even that which to human sense stands for the highest authority and power—can set things right again. "Not all the King's horses, nor all the King's men, could set Humpty Dumpty up again." Needless to say, to the child the philosophical values are and should be nil, but every

*A full discussion of the subject will be found in "Plays and Playmaking in the Elementary and Secondary Schools," by John Merrill and Martha Fleming.

art creation has in it elements of universal appeal, something to meet the growing needs of the childlike receptive thought of young and old.

It must be admitted at once that most of the "Mother Goose" rhymes and jingles serve their purpose in the experience of the child when the child has heard the rhyme frequently enough to catch the music of the rhythm, cadence, alliteration, and other subtleties which go to make up their poetry. A few of the poems, however, contain a story element which makes excellent material for dramatization and for the exercise of creative effort. The development of the dramatic instinct and the true teaching of literature go hand in hand. In each of the "Mother Goose" rhymes which contains a narrative idea, one finds a short literary art unit that is of the right size and content to meet the play-making needs of little children.

In view of the limited scope of this article, let us proceed to give some illustrations of the way in which a "Mother Goose" rhyme containing a real dramatic situation can be elaborated into a little play by kindergarten or first grade children.

"Little Miss Muffet" is always a great favorite with the children, and is one of the first rhymes to be presented. The reasons for its popularity are not hard to see—all have had an experience comparable to Miss Muffet's. She has been given a much liked food, has seated herself on a grassy mound, and is about to enjoy her feast when a spider comes and sits down beside her. Filled with fear, she leaves the untasted food and rushes away. The situation is essentially dramatic and deals with the fundamental emotions of joy and fear. The play is told with simple, significant details which lead up to a definite crisis, and which conclude in a logical dénouement. It is a veritable cameo in its perfect technique.

How should the story be presented? Doubtless the children have heard it many times before coming to school; nevertheless, it is well to motivate the story before the rhyme is repeated to the children. One cannot lay down a set way of leading up to the presentation of a piece of literature. The presentation varies with the class, the time, and the teacher. One hesitates to give an illustration, lest someone will attempt to follow the letter and lose sight of the spirit. Devices are of slight value, but principles are fundamental and eternal. Without doubt, it is wise to direct and focus the at-

tention of children before presenting any piece of literature. The writer always attempts to build up a proper background, create a proper mood, and prepare for any unusual words or terms. Failure to understand a word frequently prevents a child from getting the author's idea. For example, a little child who had just repeated "There was a crooked man," was asked what a *stile* is. He replied, "It is what mother says her new dress has." Play is the child's mode of study, so we approach the study of Miss Muffet through the portal of play. We may begin with an imaginary luncheon, then lead the children by easy and natural steps to recall the fun they have had in the summer eating their luncheon alone on the lawn under a tree. When the moment is right, the story of Miss Muffet is told. The name is not given, and the exact words of the rhyme are not used at this recital of the story. It may be told in some such manner as this: "A little girl's mother gave her a bowl of something which she very much liked. The mother told her she might go into the garden to her favorite seat on the lawn and there eat her luncheon. While the little girl was tasting the food a great spider came and sat down beside her. . . ." and so the tale runs on to its close. The children soon recognize the story of "Little Miss Muffet." They are all eager to tell the tale in its rhythmic form and are allowed so to do. They are eager also to play it, and this impulse is gratified. When the rhyme has been repeated and a number have played it, there is likely to be a stagnation of interest unless the children's eagerness to tell similar experiences of their own with spiders is recognized and they are given an opportunity to express themselves.

When they have given vent to their desire to relate their own adventures, have told the story in rhyme, and have played it, what is the next step? Is it wise to leave it and go no further? Certainly not. It is wise to go on until the children have got from the rhyme all that they are capable of getting at that time. But what is the next step? Recalling to mind the children's first acting of the story reveals the fact that it was primarily pantomimic; that there was a noticeable lack of dialogue, and very little characterization. A larger sense of characterization will lead to some slight use of dialogue. Our next step, then, is the development of a sense of characterization. This will come through the further development of the story. Children will attend to a story as long

as it continues to develop. The next duty, then, is to see to it that the story shall continue to develop for each member of the class. Now, every vivid impression tends to find an outlet in expression, and the fuller and the more vivid the expression the more likelihood there is that the impression will remain. To illustrate: When the attention of the child has been attracted and his interest aroused, there follows a very lively image or mental picture. The child then has an impulse to give some expression to this mental picture. He may give it pantomimic expression, or vocal expression, or he may attempt to express it by means of a drawing, or give it some physical embodiment, as in clay. The fuller the expression, the more permanent the idea. The very act of expression causes the individual to realize the points of cloudiness in his impression, tends to make him return to the mental impression and exercise closer observation. This closer observation is possible because the act of expression has clarified the thought and left the mind free for restimulation and for a larger and more truthful impression. Re-impressed, the individual is ready for a new expression of the fuller mental picture.* As this process goes on, characterization develops and dialogue begins.

It must always be borne in mind that the children of the kindergarten and first grade are in a pantomimic stage of development; they are primarily interested in things as wholes; they get large general impressions, and express themselves in terms that to the adult seem extremely hazy and sketchy, but which to them are full and significant. Children of the first grade are in somewhat the same stage of development as the Egyptians were when they conceived and made the great pyramids. Dramatic expression in the first grade is largely in terms of pantomime, and without much dialogue, and of broad sketchy characterization which lays stress on the large, obviously significant details.

Having digressed to lay stress upon the science of expression,

*Warren in "Elements of Human Psychology" states: "The two essential factors in memory (and in imagination as well) are attention and revival." Colonel Parker, in his "Talks on Pedagogics," has said that "attention and expression are the two processes of human action which have most to do with the evolution of the human race." Expression he defines as "The manifestation of thought and emotion through the body by means of physical agents." "Attention and expression, together, are the action and reaction of the whole being in mental and bodily movements," and "are organically related by motive." Observation and expression are, then, indissolubly connected, and science and art should go hand in hand throughout the process of education. The more lively the child's interest or motive, the closer his observation, and the fuller the emotion, the more likelihood there is that the child will use all his available avenues of expression. The act of expressing the mental picture prepares the way for the reception of a fuller mental impression and a consequent more adequate expression.

let us return to the teaching of "Miss Muffet." When the story has been presented as a whole; when it has been said by some of the class, perhaps by all in unison; and when it has been acted by a few of the children, the next step is to give every child a chance to express himself in terms of action. To allow everyone to act in front of the class would take too long; to allow a large portion of the class to leave their seats at one time would only result in confusion. Fortunately the need for general participation can frequently be met by having the children at their seats act a detail of the story or a related detail. (It must be borne in mind that this in no way takes the place of the acting of the whole story in groups at the proper time.) To illustrate: The teacher, assisted by some of the children, may pretend to give to each one of the class a bowl of curds and whey and a spoon; then together they have a jolly play feast. Next, perhaps, the teacher and pupils play spiders, spin webs, travel about the room. Gradually a suggestion of the spider's movement is seen—this was entirely lacking in the first acting. Through these and similar devices all of the children are brought into the play. Habits of study are developed; through expression the thinking of the children is clarified, and their minds are made ready for a fuller appreciation of the dramatic situation; moreover, the first steps in the development of characterization are made. From this stage of development, the children can be led to the initial step in the use of dialogue, which is the next consideration. They take turns, perhaps, in playing mother, select someone in the class and surprise him with an imaginary dish of some much-liked food. This play necessitates the choosing of some particular food, the calling of it by name, and the offering of it by some one of the children. The use of conversation is most simple, but it is a natural and valuable step in the development of dramatic play. Such games will help to destroy self-consciousness and give an opportunity and necessity for conversation, and so prepare for the use of dialogue needed in the acting of "Little Miss Muffet." The wise teacher will find that there are many ways in which the child's horizon can be broadened, many legitimate ways in which he can be given opportunity for expression and be made ready for closer observation and fuller expression. After this detailed work, the story is again played.

The children of the kindergarten and first grade have very little power to sustain characterization. The sense of being a spider, for example, is so new and strange that the child forgets all about the part he is playing and is conscious only of his own feelings, and stops to enjoy the novel sensation. These are the growing joys and not the growing pains that accompany the development of the aesthetic and dramatic sense, and the strengthening of the personality to take in the larger world, for, "All experience is an arch where thro' gleams" the "untravell'd world." Young children cannot attend for any great length of time, so the teacher should not dwell long enough at one time to tire them. In the first grade the teacher frequently can dwell upon a "Mother Goose" rhyme twenty or twenty-five minutes for two or three, perhaps three or four days, in succession. The children will be glad to come back now and then to the story, and will love to recite it, play it, draw it, and model it a number of times; they will be interested just as long as the story continues to develop or unfold for them. The teacher's duty is to know how to choose a story that is worthy of presentation, and how to create the right atmosphere. He must be sure of the steps by which the child grows into the fullest appreciation of a piece of art, and must intuitively know when to stop work upon a story and when to return to it.

"Little Miss Muffet," taught in a proper manner, increases the child's power of observation, strengthens his will, helps him to master fear, stimulates the dawning feeling for rhythm, and exercises his emotions wholesomely. There is no danger in this expression of emotion, because it has an adequate cause. Emotion should never be used for mere entertainment; it should never be aroused without a definite and legitimate background. Emotion will not be too strong if used under full control for real things. Hugh Ralcy Bell declares that "there can be no friction between the expression of a sane emotion and the rational rise of knowledge." "Wisdom and emotion work together in all their higher phases when expression is the function of intellectuality." In the word *expression* we have the crux of the whole matter. Educational methods have rarely given full opportunity for that sort of expression that has intellect, will, and emotion, all coöperating in the act of realizing some absorbing, vital, social idea.

It may appear that the writer has spent an unconscionably long time upon these first steps, but he is convinced that he is justified in so doing. This first stage of development is the most important of all. If the foundations are wrong, no matter how carefully one may build the superstructure, it is bound to be weak and unserviceable.

Another rhyme that lends itself to dramatization is

“Jack be nimble,
Jack be quick,
Jack jump over
The candle-stick.”

This little poem cannot be acted until it presents a dramatic situation to the children's minds. First the children see only a boy named Jack jumping over a candle-stick. If they act out the rhyme, the action is largely physical—that is, pantomimic—and with but little dialogue, either original or taken from the poem. If their natural desire to talk about the poem is given free rein, someone will wonder and ask, “Who says, ‘Jack be nimble’?” Then another one will perhaps say, “Why, it's the father sending Jack off to bed.” “Why does he tell him to jump over the candle-stick?” “Because Jack is sleepy; the father wishes to awaken him so that he can find his way upstairs; his father knows that jumping over the candle-stick will rouse Jack.” And so in some such manner and in some such conversation the children create an imaginary story and connect the incidents of the rhyme with human experience. After this when they play the little poem it has a real dramatic quality. One child is the father, perhaps reading the evening paper; Jack sits beside his father dozing; the mother is preparing Jack's bed. She calls for Jack. No reply. Then she calls to the father to send Jack upstairs. The father looks at Jack, sees he is almost asleep, and says

“Jack be nimble,
Jack be quick,
Jack jump over
The candle-stick.”

Because it is said with a purpose, this little poem now is given by the one who is playing the father with genuine meaning—he is

the father for the time being; he is thinking in personal terms, and only by thinking in personal terms do ideas evolve and become valuable in one's development. Jack rubs his eyes, picks up the candle-stick, makes his way upstairs, and his mother puts him to bed. Dramatic expression of some similar nature works out in the children's own free and spontaneous thinking.

In a large class it is not possible each day to give every child an opportunity to play a part all the way through, and yet there must be ample opportunities for each child to express himself through voice and bodily movements; otherwise, his ideas never fully function but like all fleeting impressions quickly disappear. In order to secure ample opportunities for all to express themselves, the whole class is frequently invited to "make believe" without leaving their places. For example: The teacher asks the class to pretend that it is nearly bed time; that they have played with their toys until they are tired; that they are so sleepy that they can hardly keep their eyes open. "Now, let us make believe to fall asleep," the teacher suggests. The children quickly enter into the game and suit the action to the word. Or the teacher may say, "Make believe that you are Jack waking up." The teacher, playing with the class, pretends to be the father, and calls to them to awaken. The children rub their eyes, yawn, and show other signs of waking.

Through this playing of an incident of the story the children develop a sense of characterization, and the self-conscious ones act freely because they have no fear of being observed by their fellows.

It is an excellent idea to have half of the class act while the other half observes. To illustrate: The teacher may say, "I am going to invite the children on this side of the room to play that they are father reading the newspaper. The children on the other side of the room may see which one seems most like a man enjoying his evening paper."

In this fashion, and in similar ways, the children—after a group or several groups have played the story as a whole—are led to concentrate upon the parts of the story, and by the general use of pantomimic characterization all are led to study intensively the parts of the story, and to give them expression. A replaying of the whole story should follow this detailed work, because the children's last impression should be of the story as a unified whole.

The dramatic instinct finds perhaps its fullest flowering and its richest function when it creates, weaving ideas into newly created designs. Memory recalls ideas related as they were in actual experience. Creative imagination arranges remembered ideas in new and original patterns. The artist arranges these ideas into patterns which have significance, proportion, unity, and beauty.

"Hey! Diddle Diddle" is a delightful "Blue Bird" sort of fantasy. We all love to picture a world with fewer limitations than those now seemingly imposed upon mortals. The little poem is full of delightful suggestions and opportunities for plot-making and for characterization. One class of first grade youngsters imagined that the poem "Hey! Diddle Diddle" pictured a situation very much like this: A more or less sedate cat and dog, and a thoroughly sedate cow—to say nothing of the usually inactive plate and spoon—wearied of their quiet and uneventful life, threw off all restraint as soon as their master and mistress were abed and asleep, and in the freedom of the night and under cover of the dark, held merry gambols in the open.

The children of their own initiative created and acted, with constant variations, a little play of which the following is a rough scenario: A father and mother, one summer's night, shut up the house preparatory to retiring. The cat and dog were put out of doors because of the mildness of the weather. The cow, owing to the absence of all signs of rain, was allowed to remain in the field. The mother placed on the table a dish and spoon in order that the breakfast could be prepared speedily in the morning. The father closed the doors and put out the lights. When the man and woman were sound asleep, the cat brought out her fiddle from its hiding place and amused herself playing a lively dance tune. The music was so gay and irresistible that the cow was unable to refrain from dancing, and finally became so excited that she tried to jump over the moon. The little dog entered into the fun, barking loudly to show his delight. The dish, unable to remain quietly in its place, bounded from the table, jumped through an open window, ran into the garden, and joined the merrymakers. The spoon, unwilling to be left alone, followed the dish. When the merrymaking was at its height, the sun appeared in the east. Immediately the moon waned, the cow, the cat, and the dog settled down, and the dish and the spoon returned to their places. The father and mother

arose. They recalled having heard a disturbance in the night. They looked about but found everything in order. The cat and the dog were asleep; the cow browsing in the field. They finally concluded that they had dreamed hearing the strains of a fiddle accompanied by the barking of a dog and other unusual sounds.

"Hickory, Dickory, Dock" is another Mother Goose rhyme which, when it takes hold of the imagination of the children, frequently leads them to elaborate it into a little play. The writer, while teaching in Peterboro, New Hampshire, one summer, used it with some of the very young children. The writer told the story with a dramatic setting which a group of Chicago children had worked out in much the same manner as the dramatization of "Hey! Diddle Diddle." It was the custom in the Peterboro School for the teachers to note daily the purpose of each recitation, the method used, and the results obtained. The following quotation from the author's records may be of value.

AUGUST 1

Group I

Purpose: To develop the story of "Hickory, Dickory, Dock" for the class.

Method: I attempted first of all to create a dramatic feeling which would make fertile soil for the story when told, and which would bear fruit in the form of whole-hearted, intelligent expression. I began by asking what sort of a clock they would like to own. All preferred clocks which struck the hours. I then pretended that I desired to purchase a clock—one that would strike the hours so that I could hear it all over my large house. I played that the children were clocks. I wound them to hear them strike. In this way I got every one into the game immediately and completely. We then had a store, with clocks, a store-keeper, customers, expressmen, etc. Then we sat down and I told the story of a man who purchased a new clock just as we had done. I told them when the man got the clock home and when every one had gone to bed, something gray, with sharp bright eyes, came out of a wee hole, and saw that new clock. The children guessed that the wee gray thing was a mouse, looking for food. I then told them how the mouse, imagining that the new clock might be a cupboard, climbed eagerly up the clock. Just when the mouse was at the very top the clock struck the hour. The poor mouse filled with fear ran down as fast as his little legs would carry him and fled down a hole to tell his family of his terrible adventure.

We then played that we were mice, running up a clock, hunting for food.

Remarks: The result seemed most satisfactory.

creative expression, the class room must supply, as nearly as possible, the freedom that is present when the children, wholly self-motivated, self-directed, self-expressive, play their story unobserved by critical eyes and ears. For this reason costuming has little if any place in the dramatizations made in the kindergarten and first grade. The unbounded fancy of the children renders costume both unnecessary and injurious to their progress. Education and not entertainment is the purpose of the work.

Children should never act their stories before a formal audience. This does not mean that they may not with great profit share their stories by playing them before other classes or for parents and close friends, but this acting should be done in a simple, natural way, and should be actuated by the desire to share much loved stories with others. Applause should not be permitted.*

It is the custom of the Francis W. Parker School to have the children of the first grade, after they have dramatized a number of the "Mother Goose" rhymes and jingles, act some of them at the regular daily assembly period before their parents and two or three other classes of the school. The rhymes are acted in the small gymnasium. The audience is limited in size, and is seated about a hollow rectangle. The children, without special properties or costumes, act their little plays within this hollow rectangle. The little actors, free from the conventions of a stage—which requires for one thing that the actors consider the audience and turn toward it when speaking—move about at will and speak and act as they are inclined. They place their scene wherever they wish. Two or three little benches mark the localities mentioned in the story, and the action moves from locality to locality as it did from station to station in the old mediaeval plays where there was neither curtain nor special stage setting.

The necessary brevity of this article has given opportunity for little more than an introduction to the subject of play-making, its purpose and its scope. The writer hopes that he has at least made it clear that play-making, even in the first grade, is indissolubly connected with the teaching of literature, and that dramatization fosters the growth of the child, furnishing a natural avenue for creative effort and social participation.

*Read Amy Lowell's introduction to "Poems of a Little Girl," by Hilda Conkling.

CREATIVE EFFORT—IN DESIGN

(The Older Children)

The art class can offer an unlimited field for creative activity.

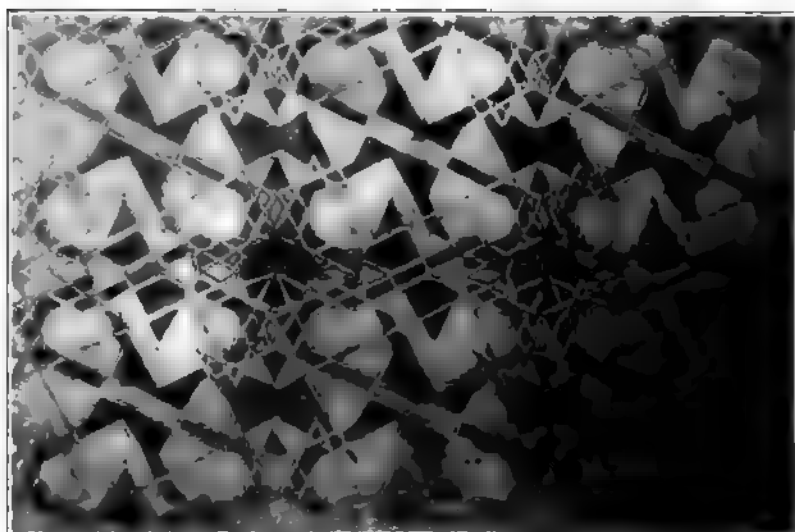
The following example of work done by older children is drawn from a first-year high school group.* The group wished to give the art room a distinctive air, make it different from other class rooms. This idea had been in the mind of the teacher for many a day. The art room chairs, low-backed and attractive in construction, had been purchased unpainted two years before, looking forward to a time when just such an inspiration should spring forth. The desks were of polished oak and very ugly to look at, and the chairs referred to were a light cream color, being merely shellaced on the natural wood. The walls and ceiling were white, and the woodwork, oak, had been stained a greenish brown originally. From this meager description you can get a picture of the spotty, ugly place. The proportions of the room are fine, and the ceiling is panelled and divided, giving great possibilities for a clever design. There are three large windows on the north, and one large and two small high ones in an alcove on the west. The lower south and east walls are covered with blackboards.

The children soon realized that this problem required much study of color and design. They made plans in the rough, and finished some in color. They decided to make the walls an oyster grey, the ceiling a pale cream, the woodwork a medium grey rose. This was done, and appalled us by what it did to the room, with the yellowish chairs and the polished oak tables. We studied to find out what was the matter and what was needed to make the room livable and beautiful. After much experiment we found that we needed a green-blue somewhere to balance the grey-rose, and some black. It took a good deal of time and much work to plan just where to distribute these colors, to get the best effect, but at last it was decided to paint the desks black and the chairs black with green-blue seats, to have two black screens with a narrow green-blue edge, and to get a black Japanese vase for the top

*The project here described was mentioned in an earlier yearbook. It has seemed advisable to discuss it more fully here because it contains a variety of educational elements.

of the cabinet. All this took a very long time to accomplish, doing only a few desks at a time. The color scheme proved satisfactory and restful, and we were very happy over the result, but not quite satisfied. We must have some decoration on the desks and chairs, and perhaps elsewhere.

The class had become interested in magic squares. A teacher of mathematics came into the art class and worked out the numbers with the children. Then they used the magic lines thus acquired as a basis of design. By moving the dots about and rearranging them horizontally and diagonally and vertically and combining different squares, they made many beautiful designs. These were



All-over pattern in notan done on the magic line of eight, finished in pencil

most of them finished in black and white. Now we went to work to see how we could use these ideas in designs for the furniture. The plan was particularly interesting to the class, because they thought the result not only might be beautiful but would be magic. They even went so far as to say that anyone using a chair and a desk with such a design on it would be inspired to do wonderful work. And so the work and the word grew until the children became so much interested that they gave a morning exercise on

15 =	8	1	6
15 =	3	5	7
15 =	4	9	2

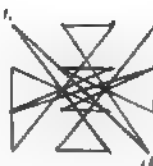
Magic Square of 3



Magic line of 3

34	34	34	34
1	15	14	4
12	6	7	9
8	10	11	5
13	3	2	16

Magic Square of 4



Magic line of 4

34	34	34	34
1	14	15	4
12	7	6	9
11	11	10	5
13	2	3	16

Magic Square of 4



Magic line of 4

65	65	65	65	65
11	24	7	30	3
4	12	25	8	26
12	5	13	21	9
10	18	1	14	23
23	6	19	2	15

Magic Square of 5



Magic line of 5

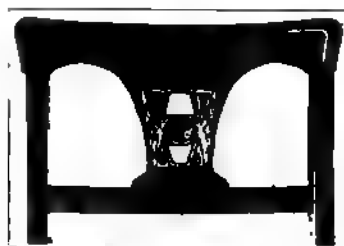
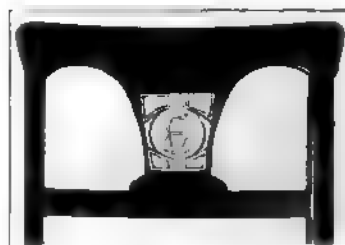
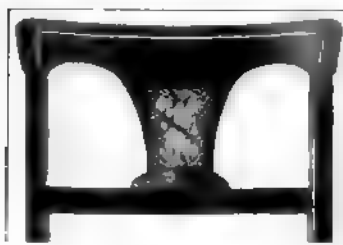
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22	63	48	11	60	5	80	3
11	46	61	24	1	52	7	58
62	21	12	45	8	57	4	51
19	36	25	40	13	44	53	30
26	39	30	33	56	38	14	43
35	28	37	28	41	16	31	54
38	27	34	17	32	65	42	15

Magic Square of 8

NOTE—The magic square is an arrangement of numbers in the form of squares which when added vertically, horizontally, and diagonally give the same sum. The magic line upon which the design is based is a line formed by following the numbers in any of the squares, in order, from cell to cell, and returning to point one. Mediaeval philosophers, astrologers, and eminent mathematicians and artists were greatly interested in the magic square and hypercube. Albrecht Dürer introduced a magic square into one of his etchings called "Melancholia." The magic lines of the magic square are rich in possibilities of beautiful design. In India, the magic square is the basis of a design on the gate of the fort at Gwalior, and has been used for decoration on garments.



magic squares. Finally each pupil put a design on a table or a chair as he wished, in beautiful colors. Each design was different, and still the twenty-four were harmonious, because of the similar basis used. The children put the designs on the chair backs, each filling the same space, but all using different designs. Then they lined them in, and finished with lines on the edges of the seats.



The Varied Designs on the Backs of the Chairs—built on magic square lines, finished in brilliant colors, and lined in with orange

The designs on the desks were of different shapes, but all rather small—not larger than five by five inches; they were put on top of the desks, anywhere each pupil thought best, sometimes in the middle, sometimes on the side. You may notice this in the illustration.



Picture Showing the Designs on Two of the Desks

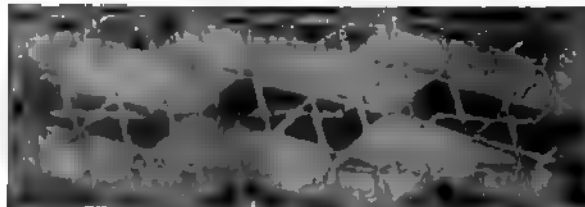
We also made a panel of tiles for each side of the west alcove. The pupils made in clay a plain tile about six by six inches, and cast as many as they needed, in plaster. These were shellaced and painted in colors—using the magic square lines of four—and an inch moulding enclosed them, painted like the woodwork. The blackboards were covered, when not in use, with curtains the color of the walls, giving large, restful spaces. The room was really beautiful and very unusual. The classes loved to come into it for art, work or rest, and we noticed that the teachers and children engaged the room for gatherings and parties when possible, so we felt that our art room was enjoyed by all and was a success.

The influence of this experience was carried out of school into personal things belonging to the pupils. For example, one boy decorated his desk at home with a magic square design. Several boys put designs made on magic square lines on their sailboats and canoes. One boy used the magic lines of the "8 square" to make a design for a book-plate for his father. Several girls used the squares

and hypercubes as a basis for embroidery designs to decorate their homes. The magic quality and interest in this work spread through the school, and many smaller children came to the room to make inquiries and find out how to work the squares into designs. We had sheets printed with 3, 4, 5, and 8 squares, so that anyone who was interested could have one.

This work gave an opportunity to teach the children design and the application of its principles to many everyday problems. They found out that balance of color and values, harmony in color and values, and interesting relation of spacing lines and masses, were equally important in a well-designed costume, a book cover, a picture and frame, a house, the furnishing of a room, a well-written paper, and many other things. They also discovered that many expensive gowns, costly houses, and rare objects of so-called art, have few art qualities; that they often lack beautiful construction as well as decoration.

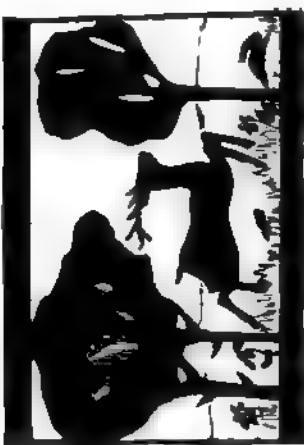
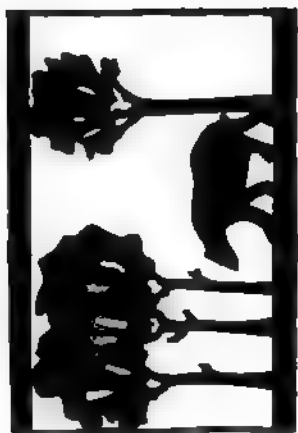
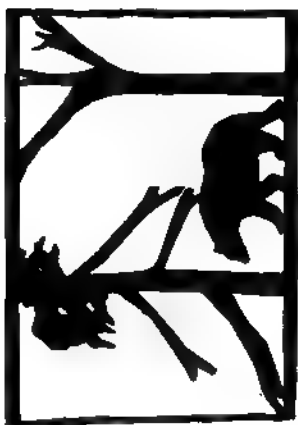
It took two years to complete this work on the room. The first portion of each year it was necessary to study and experiment in design and with various kinds of motifs and units and to learn how to adapt design to material and to use color with some degree of understanding and taste. It was worth the time, for during this study the children gained much in discrimination and feeling for the best design and construction and had an opportunity to develop their creative ability and to apply it to a practical problem. This meant that they acquired a surprisingly large amount of technical knowledge and skill, and that they worked with great zest and enthusiasm because they were "making" something they would all enjoy.



All-over Pattern on Magic Line of 5



Children Putting the Designs on the Chairs



Paper cuttings used as stencils. The life of the hunter brought about the interest in animal life. Drawings of animals were made and then placed in compositions. Made by children of sixth grade.

CREATIVE EFFORT—IN DRAWING AND PAINTING

(The Younger Children)

The longing for creative expression is inherent in everyone. With children creating is as natural as speaking, and it is only when the pressure of limitations is put upon them that the work lacks the spontaneity that is instinctive. Often the request for a larger piece of paper comes, indicating the desire for freedom to compose in a larger way. To the child, art is largely a matter of narration. He loves to play, dramatize, draw, paint, dance, and sing. All that is joyous is his life, and art is the reliving of his joys.

If you visit any group of young children who have the freedom to express themselves naturally, you see that which delights your soul. I have in mind a group of six- and seven-year-olds ready for a painting lesson. They are at the door, all expectant, aprons on, pencils in hand. They go down the stairs in a friendly group to the little room where they may work undisturbed in spirit, and paint lovely pictures. Sometimes all the children know before coming what they wish to paint. Often the gay bottles with brilliant color stimulate imagination and help the choice of subject. There is always a variety of subject: boats with gay sails, with green and blue water, automobiles, busses with passengers on crowded avenues, houses and trees, gardens, pictures of stories that have been made real through dramatization, illustrations of experiences in real life. Here is a little girl painting a picture of chickens eating sprouted oats. They are white chickens, and they are eating the oats that the little girl sprouted in a flower pot with red paper around it. A blue sky, a gray wall, and two trees make the composition lovely indeed. Another child has made a picture with many people in it. The subject required people. As she finished, she said, "I put nineteen people in my picture, and they are going over the foothills."* The children in the group stopped their

*See p. 117.

work long enough to enjoy the finished picture. It is not unusual for a child to say, "I love my picture, don't you?" It is dear to his heart, this piece of worthy work, and it is admired with you in an unaffected, honest, impersonal way.

Can you imagine a school day with no opportunities for creative expression? A number of years ago, during the world war, a patriotic community thought it wisdom for the children's art and handwork time to be given over to knitting. I visited this school at such a time. I shall never forget the spirit of lethargy and quiet that I felt when I entered the room. There was not even a story read to the children. Surely there is a better and more positive patriotism than this! I am sure the knitting, however worthy, was not wise at such a sacrifice of spirit.

Education should provide experiences that would cause the child to desire to make that which has to do with beauty. Is not



Kalaomine painting by child of first grade. These were the first paintings in this material.

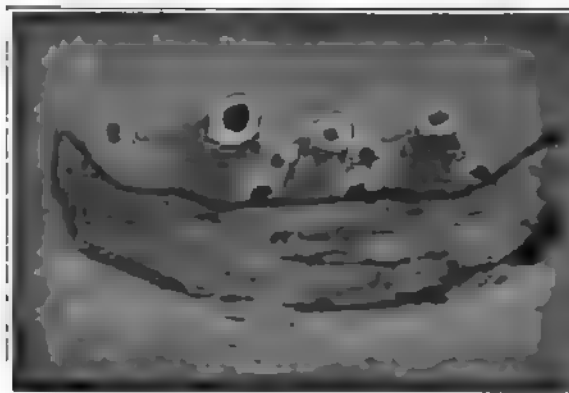
honesty in effort and result the true quality of art? However simple it seems it is not easy to place the child in an unbiased atmosphere. He finds himself in an already-made esthetic environment that others have selected. Money buys that which formerly had to be created. The old-time crafts of spinning, weaving, dyeing,



Eskimo life. Painting by first grade child.

making furniture by hand, while their origin was for utility, still afforded ample opportunity for creative handiwork. This was a stimulus to the imagination, and one that the child of to-day lacks. The need to make stimulates invention, and thus causes the creative imagination to function.

The problem of art teaching to-day is largely two-fold in its difficulty: first the difficulty that children have of making form correspond to the object, and second the teacher's dictation of the problem. Such dictation is often too rigid for the child's thinking. The teacher feels he must teach the child facts. The argument of the world says that the knowing of many facts makes a wise person. But can the intellectual alone produce creative work? Does it not leave out of consideration the child's feeling? I have seen children



Eskimo life. Painting by first grade child.



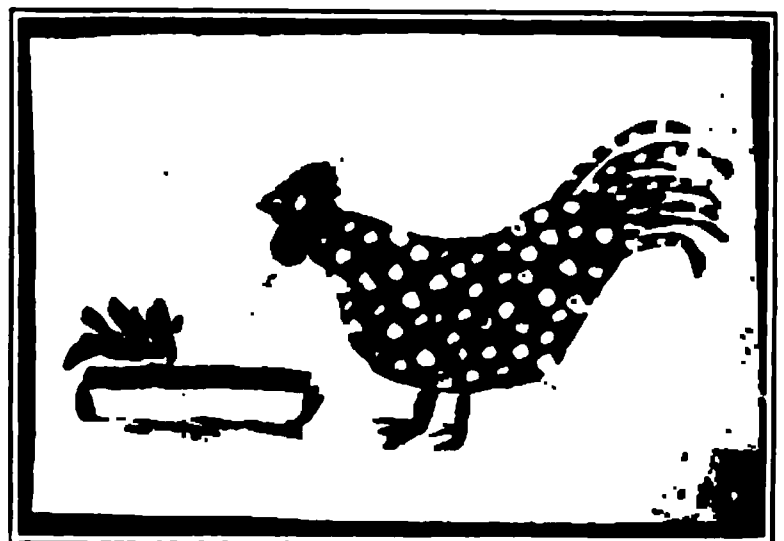
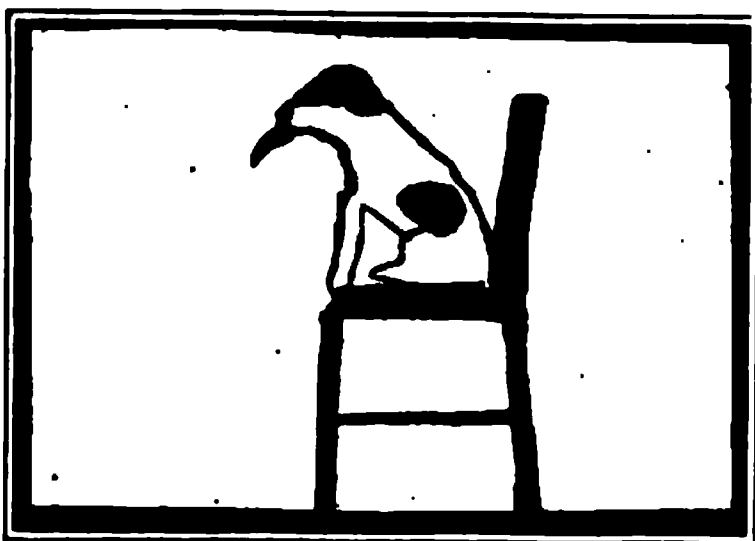
Kalsomine painting by child of first grade.

come to a painting lesson so filled with suggestions from an eager teacher that it was impossible to secure creative results. A child can be made to do a piece of dictated work, but is this the purpose of education in its true meaning? Should there not be a turning away from immediate results to note the effect of the work on the child's thinking? There is loveliness in an unspoiled child's honest work. This charm of early expression, however, passes all too soon. Does this need to be so, or is the fault with our teaching? As the child matures, the outward senses are trained, but often the finer emotions are neglected. Our world to-day respects the intellect, but does it fully value the qualities that cannot be exchanged for money? In the leading colleges of the land art is non-essential. Some schools condemn a child if he is good in the arts but lacking in academics, as if the fault of poor academics resulted from good work in art. These attitudes commonly held towards an art subject may explain why the child's early creative powers are weakened as he grows older.

All great artists have a childlike spirit. Their attitude toward life is simple and direct. They give honest expression to ideas uninfluenced by popular opinion. This is a mark of greatness. The

desire for popularity has led many an artist to lose his true sense of art so that instead of expressing his own individuality he does what is popular at the time. Children sometimes do this too and imitate someone whose work appeals to them. It would be well to discourage imitation of form and composition.

The question may be asked, "When can we know that a child's work has the quality of art?" It is natural for children to be pleased with what they have made. This is not a complacent state of thought but results from having put the whole capacity to the work. An illustration was noted one year when a group of third graders were making designs for a curtain. The children were studying the Norse people and used such material as the courageous Norse would have used. When a young child does this kind of a problem, he enters into it so feelingly that for the time he has such qualities as the heroic Norse had. This is a function of the creative imagination. The children had cut Viking ships and dragon heads. The best ones were to be chosen for the pattern. When the choosing time came every child chose his own. For a moment the teacher had a shock to meet. She thought the children self-satisfied and complacent. But as she looked at the eager faces of the children, she realized that each child had done his whole best, and honesty in thinking compelled the choice. It would have been dishonest for those children to choose another's work. The problem of choice, however, was met by the teacher who told the children that only a certain number could be used and asked permission to do the choosing. That teacher resolved never to put the weight of choice in such a matter before young children. If the concept the child has



"Mopsy." *Kalsomine painting of pet dog by a seven-year-old child.

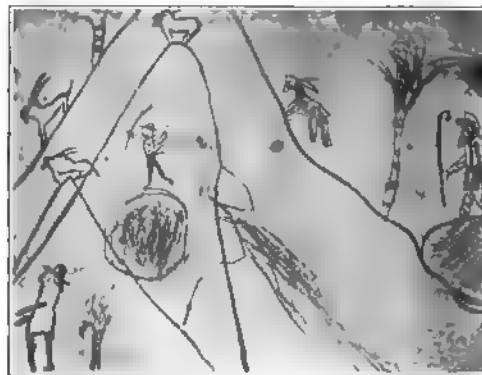
"Spotty." *Pet hen of the second grade by one of the children.



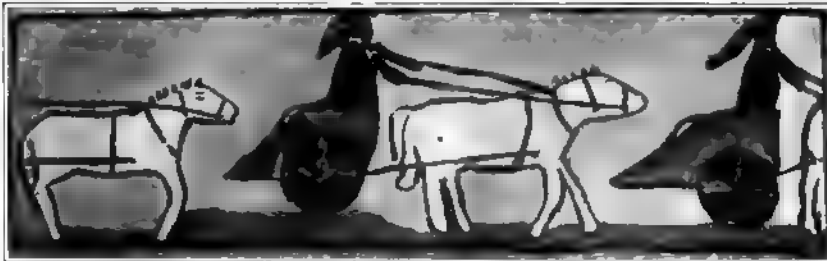
Crayon drawing showing shepherd life.

is realized in his work, it has the quality of art. This, however, can only be seen in the child's response and attitude towards his work. The reaction to the work should be a satisfied child.

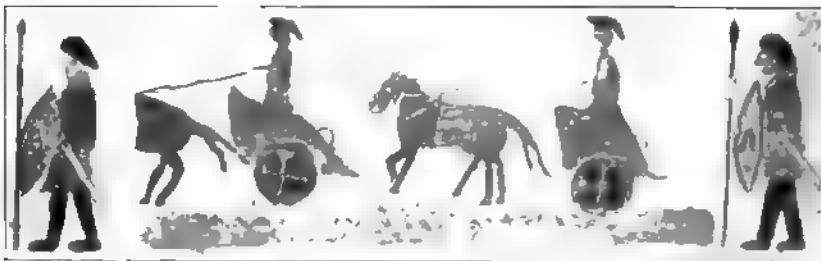
I believe it is possible to educate children with such a foundation that real art will result. Being eager to create and willing to recognize the quality of art in others, is true art, is it not? As the child grows in judgment he includes others in his interest. Often quite young children appreciate others' efforts. Confidence takes the place of timidity, and with each effort the child learns control over the medium. The inspirational nature of such activity is easily seen. Technique takes care of itself, and skill develops with the



Crayon drawing showing shepherd life.



Kalamis paintings of Greek heroes. The study of Greek history in the fourth grade gives rich possibilities for painting.

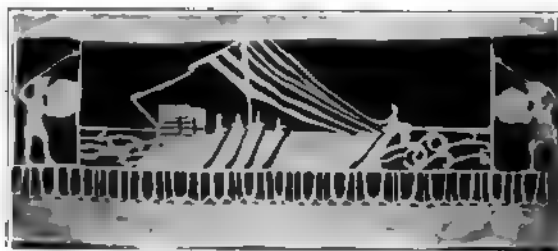




Original drawing made by two children of the fourth grade. Brown manila wrapping paper was used.



The same drawing has been traced on manila paper, shellaced, and cut as a stencil. This stencil paper is easier to cut than the heavy oiled variety.



Application of the stencil on a table runner used in the room. The application was made in brown oil paint, which makes the fabric washable.

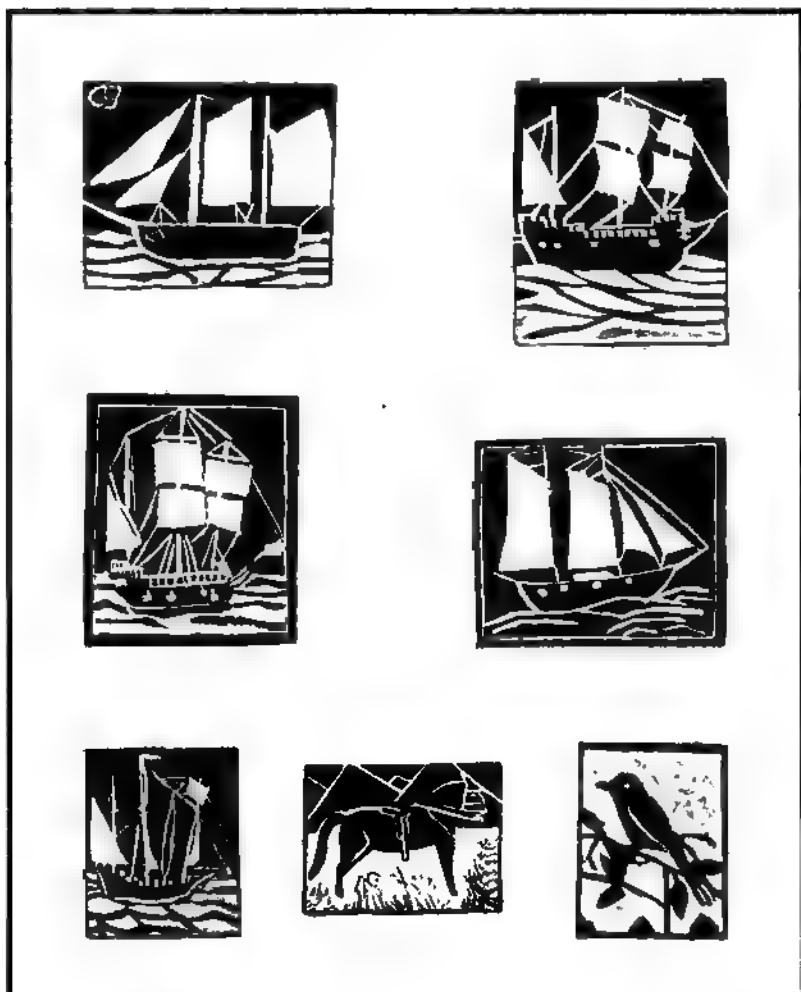


Valance and curtain made by children of fourth grade. From original drawings made into stencils. Four curtains were made, and all children in the group helped apply the stencil. The curtains are used in the group room. The valance was made by two girls. The curtain was made by two boys.

effort to make what the child really desires to make. Colonel Parker more than thirty years ago said: "The difficulties of technique or skill are very much over-estimated. The reason for this over-rating is that attempts are commonly made to make forms of expression without adequate motive and unimpelled by thought, forms that have no thought correspondence."*

This is the true reason for the need of correlation. An illustration was seen last year when a group of fourth graders designed stencils for curtains for their group room. The children were studying Greek history, and naturally their thoughts were filled with activities of the Greeks—with warriors, Greek boats in action, chariots drawn by prancing horses, temples. The design selected was done by two boys; it was a chariot and charioteer driving two spirited horses. The design was made on heavy wrapping paper, shellaced and cut. Commercial stencil paper would have been too hard to cut. The application was in brown oil paint, which made it washable. The valance of the curtain was made by two girls and shows a temple and maidens bringing offerings. This work was truly Greek in spirit. This piece of work serves to illustrate the

*"Talks on Pedagogics," p. 260.



Linoleum prints made by children of sixth grade. The interest in block-printing originated with one boy, who asked to know how block printing was done. Others became interested; about two-thirds of the class made blocks. The wood shop glued the linoleum on the blocks. The printing was done in the school print shop.

EXPLANATION OF THE COLOR PAGES WHICH FOLLOW

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Upper half—"Going over the Foot-hills." The little girl who painted the picture said, "I have put nineteen people in my picture, and they are going over the foot-hills." See the article on "Creative Effort in the Morning Exercise."

Lower half—Indian poster. The poster was made of colored paper. A number of posters were made by small groups of third-graders, showing their interest in their study of early Chicago.

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Upper half—Chickens eating sprouted oats. A kalsomine painting made by a little girl who had sprouted the oats at home. The flower pot had red crêpe paper around it. The chickens are pets of the second grade.

Lower half—Boat. First kalsomine painting painted by a member of the first grade. The child chose the subject.

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1. Indian village. Showing child's concept of forest, wigwams, and trails. Painted by a member of the third grade.

2. Free work. Painted by a seven-year-old boy during his summer vacation.

3. Indian village. Showing child's emotional feeling for Indian rhythm. Painted by a member of the third grade. It is interesting to note, in connection with 1 and 3, that these pictures were painted by two children sitting side by side.

4. Joseph and his brethren. An illustration from Bible stories heard in the literature period. Joseph is approaching from the mountain carrying lunch for his brothers. The brothers are pointing to the pit where Joseph is about to be thrown. Painted by a member of the second grade.

5. The Pied Piper. Painted by a member of the fifth grade.

6. Sunset. Free painting by a member of the third grade.

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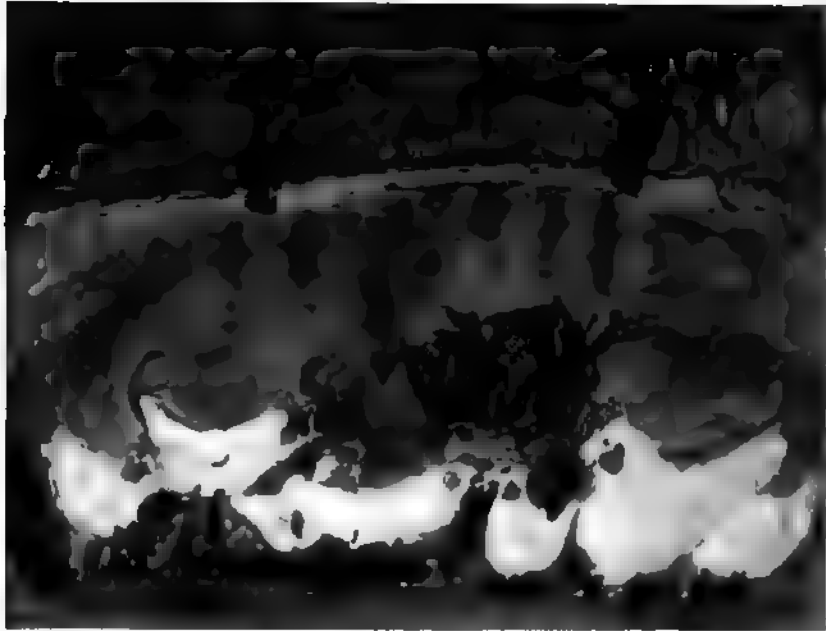
Upper half—"Knights in Battle." Painted by two boys of the sixth grade.

Lower half—"The Red-Coats." Painted by a member of the sixth grade during summer vacation, after seeing the movie of "America."

PAGE 123

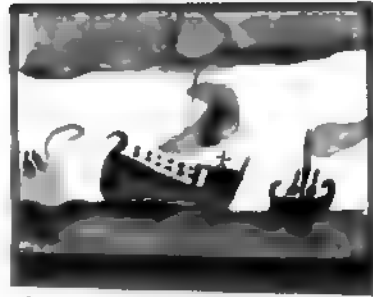
Six pictures from history notebooks of the sixth grade, showing individual interpretation of the same thought—George Washington and Christopher Gist approaching the hut of the French officers at Venango. Not all of the children chose this subject from the chapter; some chose other incidents. The teacher of the grade requires pictures as well as written papers. Most of the inspiration for art comes through this avenue.



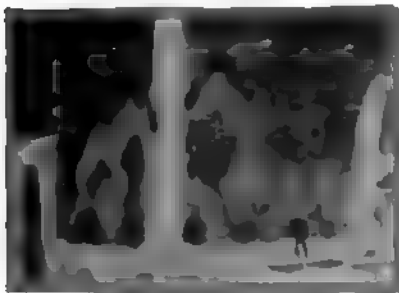




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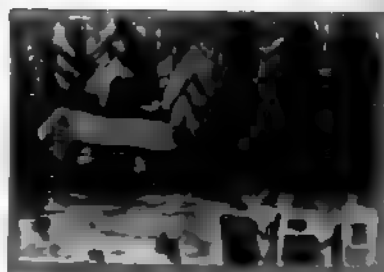


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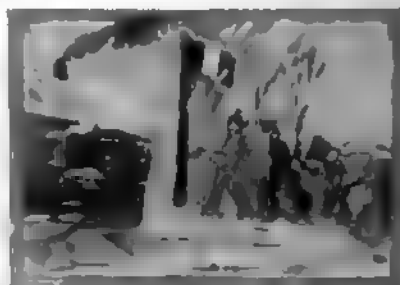
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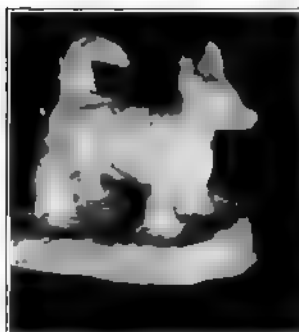
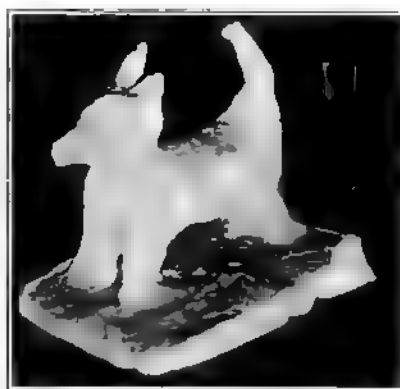


CREATIVE EFFORT—IN CLAY

Come with me and visit a group of fourth graders ready to model things that will interest you and make you question, "Where do such ideas come from?" Here are Athene with spear, helmet, and shield; Heracles overcoming the lion; Penelope weeping for Odysseus; Hermes, messenger of the Gods, skipping on his way; a Greek warrior equipped for battle and victory; a Greek chariot and horses that bring to memory the glory of Greece. The children are working in earnest, each encouraging his neighbor. Occasionally two work together combining their powers. There is a spirit of friendly interest in the group, and we hear, "I think Pat's warrior is fine, don't you?" Nixon has accomplished Heracles overcoming the lion to the satisfaction of the group. Paul has found



Pet dogs modeled by children of fourth grade.

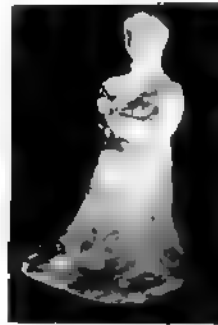


Pet dogs modeled by children of fourth grade.

a way of making Hermes skip over the waves: he has built a wall behind his figure, attaching it so that the wet clay will not fall over. Here are dancing nymphs and Greek maidens bearing fruit.

The visitor who is unacquainted with vigorous original work accomplished by children may ask, "Where do they get such ideas?" In this instance it was brought about by their interest in history. The modeled figures represented the heroic qualities of the noble Greeks. The children were too immature to understand a study of form from the standpoint of anatomy, and yet they modeled figures with ease and delight. The work shows a nobility of thought such as the Greeks had: qualities of fearlessness, courage, and beauty.

These figures were fired but not glazed, and this gave them a natural flesh color. It is right that children have the satisfaction of



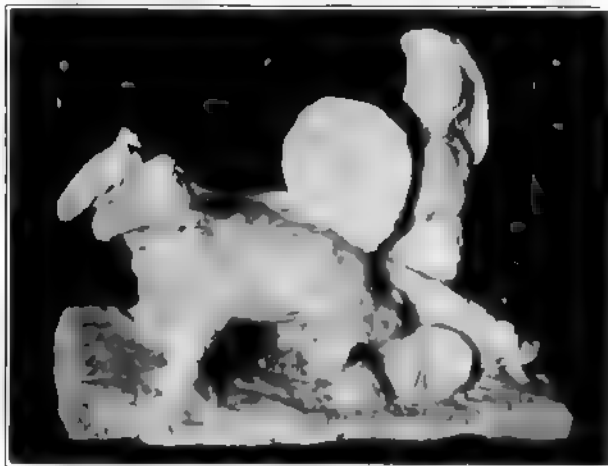
Hermes skipping over the water. The model shows how the child supported the figure with a wall.

Pat's Warrior.

Greek maiden carrying fruit.

seeing their work come to a successful completion when effort has been made. Success is a stimulus for greater effort. The confidence and power the children gain in this work is of greater value than the outward expression.

Clay is a simple medium, needing only the hands for tools. There is minimum resistance in the plastic material. We can make



Greek warrior and chariot. Modeled by boy in fourth grade.

clay do what we wish, for as the slight resistance is overcome, the idea is seen. This indicates the importance of having an idea clearly in mind before handling the material. At first the child expresses something he loves; he often models a pet. This year we have a variety of pet dogs. It is natural for children to make something they love. This loving thought and planning is the basis of art, and we see the result, a designed piece of work. Is it not art to do a piece of work without hope of reward but for the joy of doing? It is essential that material be used in its completeness. To do this requires designing. This is true in drawing and painting as well as in modeling. It may be asked, "How can a child have an idea of design when he has such a limited use of form?" Let us remember that the normal child has freedom as his uppermost thought. The finest emotions act as a stimulus for expression and may produce form that has beauty, line, and rhythm.



Head of girl, modeled by Gloria of fourth grade. This was her first attempt to model a head.



Viking shields made in the wood shop by pupils of the fifth grade in connection with their study of Viking history. The designs were worked out and applied in the art classes.



CREATIVE EFFORT IN THE SHOP

The Utilitarian Urge

Each year when our eighth grade meets for the first time the pupils are confronted with a miscellaneous assortment of desks, chairs, and tables, which, the teacher explains, will have to serve until each pupil can make a desk for himself. The shop teacher is called in, and there ensues a class discussion concerning the relative merits of various past models and possibilities of their improvement.

As the desks are needed at the earliest practicable time, and since eighth grade pupils can have had but a limited shop experience upon which to postulate a practicable creative image, it becomes incumbent upon the shop teacher to make clear just what kinds of desks are possible of construction by the pupils, and to analyze briefly those elements of strength and beauty that should be revealed in the construction. These constructional elements, along with such individual features as book shelves and foot rests, are the materials which the pupils attempt to organize into the concept of a desk. Drawings are made and also scale models of paper and thin wood. Finally the shop teacher selects the two or three designs that are possible of construction by the entire class, a vote is taken, and the chosen design is adopted as a model.

It seems needless to add that the great majority of designs submitted are far too involved in their construction to be suited to the skill of the average pupil. Indeed it is the rare pupil who has sufficient understanding of his own limited skill to design a desk that can be made by himself and his classmates. Nevertheless, while the desk finally chosen must reflect to a large extent the knowledge and creative skill of the shop teacher, there is a decided gain to the pupils from their attempt to comprehend the various elements of size, proportions, strength, methods of construction, and individual details, and relate them into a practicable concept.

In this particular desk the problem of design is vastly simplified by arbitrary physical conditions. The size of the desk is practically determined by available room space, and its height by the size of the pupil. Its general type and method of construction has been fixed by the shop instructor on the basis of his knowledge of the pupils' shop ability. All of this restricts the creative faculties of the pupils to a narrow field, but results in a definite plan fully worked out before the pupils enter the shop.

As a problem the desk offers important advantages for imparting shop information and developing tool skill, habits of order, and the ability to think in terms of standardized shop processes. For all instructional purposes the class is a unit. Each pupil is making a desk of the same design. Each pupil is impelled by the



Desks made by eighth grade pupils; the form, proportions, and construction were dictated by definitely utilitarian ends.

same motive—the need for a desk. From the time of its inception until its final completion in the shop the desk moves forward by definite stages, the success of which can each be measured by some shop principle or tool or by reference to the original model. Square corners, surfaces smoothly planed, joints well fitted, stain evenly applied—these are the essentials which absorb the attention of the pupil. The definite model he is copying provides him with a guide which in its execution makes the minimum demand upon his judgment, except in the selection of materials and the use of tools. Creative thought in this problem ceased when the design was completed and the first model made.

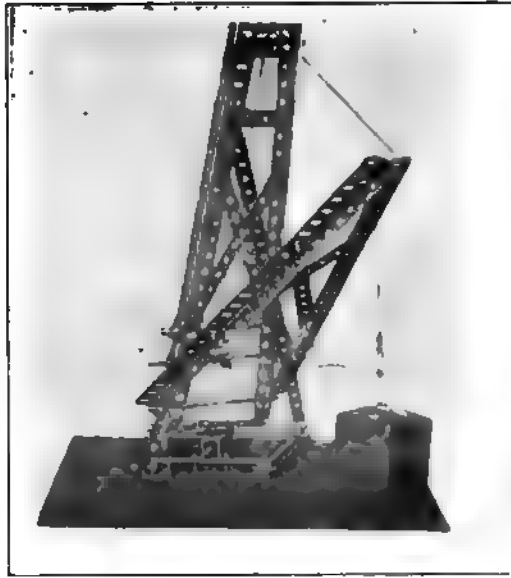
The Inventive Urge

One of our projects in which the entire school participates each year is the Santa Claus Toy Shop.* In the wood shop alone approximately 1,000 toys for charitable distribution are made or repaired. For years it has been the desire of the teachers that only toys designed by pupils be made, but as the toys are produced in quantity, after the factory plan, and as the designing of a toy suitable for large scale production involves a knowledge of tool processes, materials, and shop organization not ordinarily possessed by a pupil, it has been, up until the past year, practically impossible to utilize designs submitted by pupils.

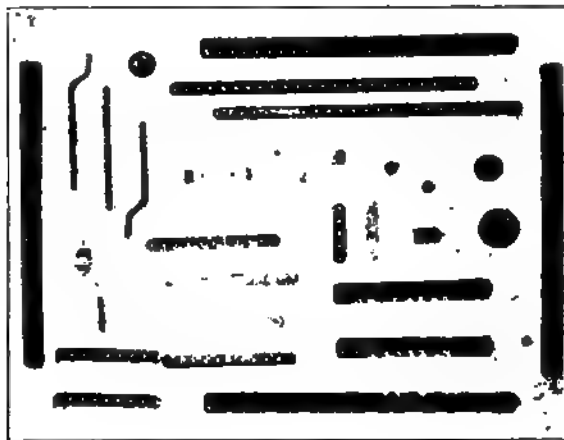
Last year a new department of the toy shop was created, a department of metal toys. One of the purposes of the new department was to utilize some of the inventiveness and ingenuity displayed by many of our boys in toys they make with their Meccano parts. As none of the pupils had had any first-hand experience working in metal, and as our shop equipment was exceedingly simple, it was imperative that we limit ourselves to only those toys easy of construction and involving simple tool processes.

Our first concern was necessarily a toy that could be produced in quantities, but along with quantity production we desired a toy that would be attractive to the child receiving it and furnish him with the maximum amount of interesting activity. After several

*See "Studies in Education," Vol. I.

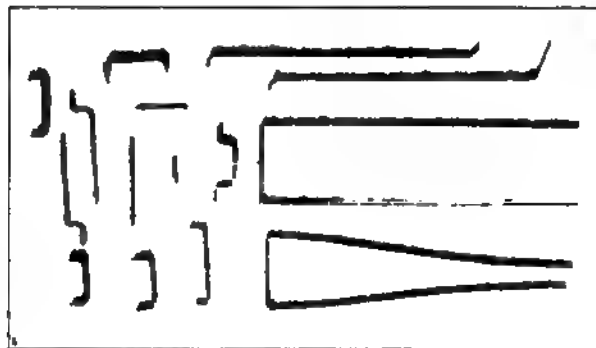


Derrick No. 1, the original model made of Meccano parts. The illustration below shows the parts entering into its construction. An analysis of the two illustrations reveals the determining influence of the Meccano parts on the size, proportions, and general design of the derrick.



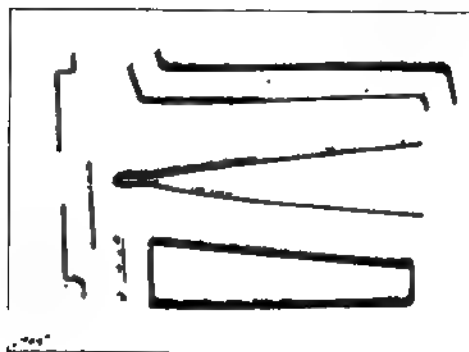


Derrick No. 2, a modification of the original model in terms of materials available in the shop. Although greatly simplified the model proved not practicable for quantity production, because of the difficulty of shaping the parts with a limited shop equipment.





Derrick No. 3. Although made up of just eight parts this model retains every essential of the original, while each part has been designed to satisfy the conditions of quantity production with very simple equipment.



group discussions the problem resolved itself into the designing of a toy derrick.

The first model submitted was made by a tenth grade boy. As shown in the illustration it was made up of 37 Meccano parts. No sooner was it presented to the group of experimenters than it became apparent to all that it would be impossible to make a large number of derricks of such a complicated model.

The same boy set out to design a simpler derrick of the same general type. Instead of using Meccano parts, which in themselves have already been through numerous manufacturing processes and standardized as to forms and sizes, the boy was limited to the use of materials and processes available in the shop. Model No. 2 shows the result of his efforts. Although greatly simplified and reduced to 17 parts the model retains the essential features of Model No. 1, that is, the swivel frame and rising and falling boom.

No further simplification seeming possible at this time the group set out to make the first unit of 25 derricks after Model No. 2. Before a dozen derricks had been completed numerous difficulties and limitations in tools and processes began to appear, difficulties and limitations which through lack of experience the pupils had not foreseen. At the same time appeared several possibilities for improving and simplifying the design, based on the increased knowledge secured during the building of the first twenty-five.

Again the original designer with the help of the entire group applied himself to the problem of a model better suited to the production conditions with which they were now somewhat familiar. The result is shown in Model No. 3. Here we have a derrick composed of but 14 parts, each of which has been clearly conceived, not alone in relation to every other part, but also in relation to the conditions under which this particular part could be produced efficiently under the limited conditions of our particular shop. After making a large number of derricks of this model none of the group could suggest further improvement; so it was accepted as complete.

The Emotional Urge

Every boy at some stage of his development reveals a marked interest in boats. That there is something deeply fundamental in

this interest becomes apparent when one learns that it is confined to no one nation, nor to any section of the earth. The boy in the small American village, far from a natural water course, when he launches the schooner he has shaped from a piece of cedar, upon the temporary pond the spring rains have formed, manifests the same intense pleasure that is shown by the Chinese boy with his miniature junk.

Whether or not it be the sense of freedom, romance, and adventure that boats, particularly sailing craft, symbolize to the boy, remains for the psychologists to determine; for the shop teacher it is sufficient that whenever boys are permitted and encouraged to make in the shop those things which lie nearest to their deepest interests, water craft of all kinds are a favored choice.

Our fifth grade class had been studying the Vikings. For several weeks much of the work had been centered in the life and historical development of these hardy Norsemen. It is doubtful if any normal boy above the age of eight could without developing a strong emotional attitude come into such intimate contact with a race in whose history and myths there is blended those elements of

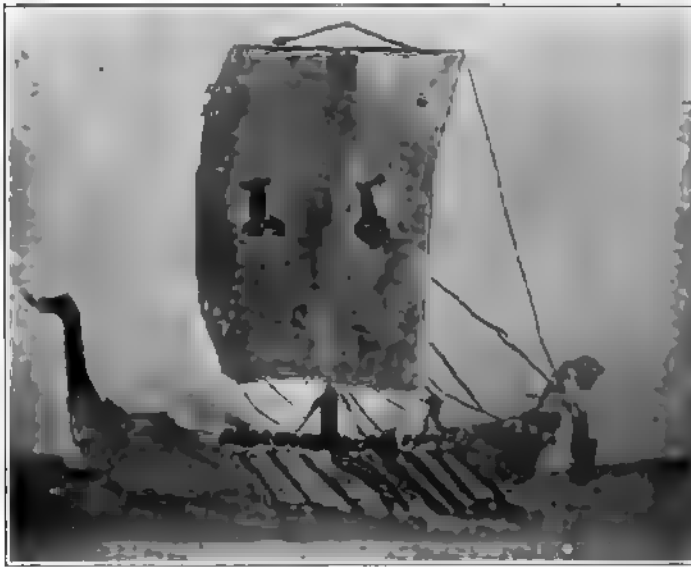


Fifth grade painting of Viking ship.

mystery, romance, bravery, and love of freedom and adventure, together with a childlike simplicity of motive.

In various forms this emotional attitude was expressed by members of the class. With some it took literary form. Some made up a play representing Leif Ericson in Greenland. Still others made highly decorative shields. With several of the boys and one in particular, "Viking" could be adequately expressed only through a dragon ship.

From the moment this boy entered the shop it was evident that he had already formed a very definite image of what his craft should be like. After its crude lines began to take shape it became apparent that the lad was making no copy of an historical model, nor was he following the accepted proportions of the conventional Viking ship. Nevertheless, except when called upon for assistance in overcoming technical difficulties in the use of tools, the shop teacher maintained a "hands off" policy, on the supposition that, since the concept in the boy's mind was unique to himself and already definitely formed, it would be wisest for the teacher to suppress his own ideas of a Viking ship and let the boy's concept, crude



Fifth grade painting of Viking ship.



Viking ship by fifth grade pupil.

image with which he started to the characteristics and limitations of the materials and processes used in its realization has resulted in a more vitalized concept and an intellectual framework to sustain it.

Of still greater value, and a value that carries over into every activity of life, is the power the boy has experienced of concentrating all of his faculties, emotional, mental, and physical, placing them at the service of a creative image, and sustaining them until the image is realized.

Summary

A brief comparison of the origin and conditions determining the development of the creative impulses underlying the three shop problems cited will perhaps better reveal their essential differences.

In the case of the desk the outstanding factor was the utilitarian motive which gave immediate direction to and definitely limited the creative thought. To a very large extent the design was

determined by arbitrary physical conditions. The interest of the pupils was chiefly intellectual and objective. They needed desks. Furthermore, conditions beyond their control determined the particular type of desk.

The problem offered little stimulus for an emotional response even had there been time to develop the necessary background of feeling. Indeed, it is extremely doubtful if any article of furniture could arouse a genuine emotional thrill in an elementary school pupil. Whatever meaning furniture has in his mental world, it rarely has associations that spring from his imagination.

Nor was there opportunity for a problem-solving interest in working out the desk design, since the testing out of ideas in their final form in a desk would require far more time than was available. In its completed form the desk is an excellent example of utilitarian ends determining the form of expression and furnishing the motive for action.

In the derrick we have an example of utilitarian ends determining the design but not the motive for action. The derrick stands for no need that the pupil feels personally. His interest is on the inventive, problem-solving plane. In the beginning he intentionally sets out to design a derrick. His concept is entirely vague. He is in that state of mind when any one of a dozen different types of derricks would correspond with his jelly-like concept.

Experimenting with the partially formed and suggestive materials of his Meccano set, the boy evolves Model No. 1, resulting in a distinct clarification of his mental image. After having definitely chosen and made a particular type of derrick, his next stage of development comes when he attempts to separate his concept of derrick from its arrangement of Meccano parts and express it in the materials available in the shop. He becomes very conscious that the toy he has produced with comparative ease with ready-prepared materials offers insurmountable barriers to production under the conditions of the shop. An analysis of his first model reveals that its essential features are the swivel frame and rising and falling boom. His problem is the simplification of his concept so as to retain these essentials in relation to the limitations of shop processes and materials of which he has for the first time become conscious. Model No. 2 reveals the second stage of his developing thought.

The final stage is reached when an unsuccessful attempt is made to produce Model No. 2 in quantities. The boy at this point

comes to realize that the production of any article in quantities involves factors that are not at all present when but a single model is to be made. Once more he is forced to re-analyze his concept and to re-conceive it in terms of the processes and organization necessary to quantity production. The result is shown in Model No. 3. Not until this stage was reached and the design tested out in the production of a large number did the original creative impulse reach its full maturity.

With the Viking ship the origin of the concept and motive for its expression are predominately subjective. Unlike the desk and the derrick, which were made for definitely material uses, this boy is making his boat because it is his best way of controlling a mass of surging feelings that to him stand for the Vikings. It is his way of organizing and giving significance to a part of his inner life that his study of the Vikings has made him conscious of.

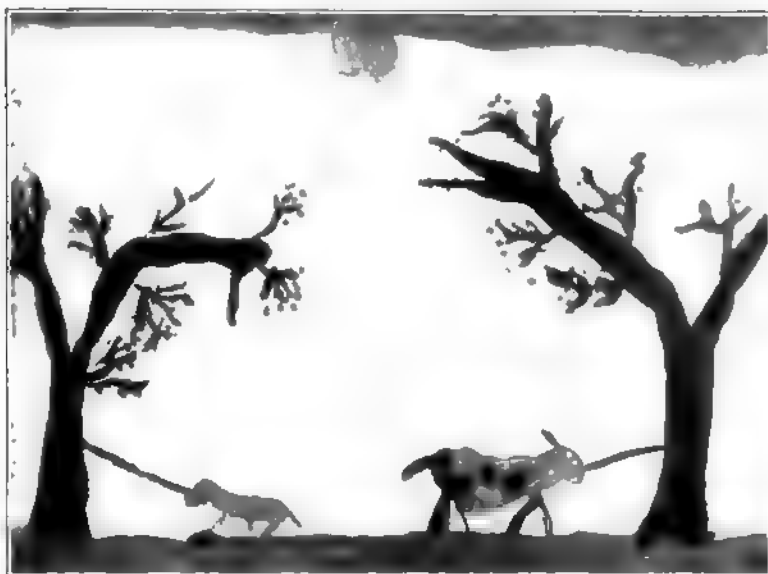
To one in close sympathy with what the boy is trying to accomplish it is evident that his craft is far more to him than just a boat—consciously or otherwise the dragon ship is to him an organizing idea, a nucleus as it were around which and through which he is attempting to express the most significant characteristic that he knows, feels, or imagines about the Vikings. Once his mental image becomes emotionally powerful enough to demand expression, his senses become keenly alive to every bit of information he can get, not only about the boats of the Vikings, but of their dress, customs, religion, voyages, and heroes. Many facts he had before learned suddenly take on a new significance, particularly such bits of history as relate to their boats. For the time being the boy has become closely identified with the life of this historic people. Long before his tiny craft is completed he is riding out a gale in the North Sea, founding a colony in sunny Sicily, raiding the Norman coast, or discovering Greenland with Leif Ericson. He knows the “feel” of the oars, sees himself at the “steere” board, senses the thrill of the sea in an open boat. To him his craft is symbolic of all these experiences, and in creating the symbol he has made these experiences a part of himself. Through the sustained effort his ship has called forth, the boy has fused in his memory great masses of impressions and information which would otherwise have remained dormant, undigested, vague, and incomplete.

Unlike the pupils making desks the Viking ship boy has no

standardized shop tests with which to measure the progress of his work. Because his concept was unique, growing out of his emotional response to the Vikings, the success of his work could be measured only by the adequateness of its correspondence to his mental image. At every stage of its construction there was a constantly recurring demand upon his imagination and judgment, and a continuous conflict between his mental concept and the resistant materials with which he was working. Aside from the physical limitations of his materials and his lack of technical skill the responsibility for his work rested solely on himself—the clarity of his mental image and the skill with which he selected from the world of his imagination those elements which would best express his concept.

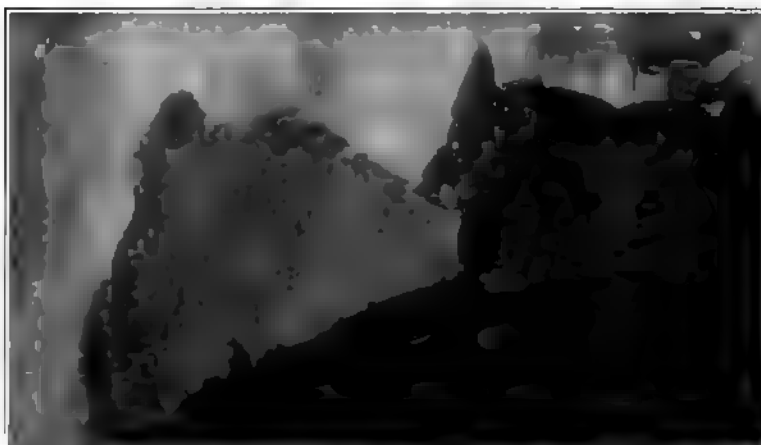
It is not the intention of the present article to attempt to define those school and shop conditions that give rise to the highest degree of genuine creative interest. In general any shop problem that in the pupil's mind stands for some deeply fundamental interest, is potential material for creative thought. By far the most significant change taking place today in the elementary school shop is the substitution of problems with an emotional and human appeal for time-honored problems such as furniture construction. The normal child seldom or never reveals a direct and spontaneous interest in any object which to him symbolizes fixed conditions of life, regardless of the fact that such conditions may have an immense influence on the enhanced freedom which mankind as a mass is feeling. But in all of those symbols of a freer interchange of thought and commodities between the races of the earth, in transportation and communication, in radio, electric power, boats, autos, railways, and air travel, the normal child has a direct and spontaneous interest. Psychologically he is born in an age when science is blossoming as never before, and important recent discoveries and inventions, regardless of their significance to adult life, symbolize to the child a vast freeing of the human spirit from many traditional limitations. The child of to-day senses the meaning of radio and air travel far better than his elders, and just to the extent that the school shop will provide conditions for forms of shop work that will express the new spirit, to just that extent will its output be of a genuinely creative quality.

CREATIVE EFFORT IN THE MORNING EXERCISE



"You see," said Dexter, "they've tethered the goat."

This eighth grade boy was enchanted by the second grade sand table story on exhibition in the lower hall that morning. He happened to be explaining it to me, his teacher, but anyone would have served as audience. In fact, anyone near at hand would have had to serve as audience to this enthusiast. The sand table was indeed worthy of the attention of an adult and even of an eighth grader. On the sand table one could see clearly foothills and a mountain. The hills were made of boxes filled with sprouted grass, and the mountain was made of bare rocks piled high. The hills were covered with paper trees on wooden bases. Among the trees we saw clay men standing, and a woman milking a cow. The animals—cows, calves, goats, and sheep—were tethered, as Dexter had pointed out, to the trees. In one spot there was a hole covered



Two wild goats guarding the Rock.



Tether-peg milking the first tame cow.



Wild bull caught in a trap.

with sticks and grass, and in this hole lay a clay cow. This, to those who understood, was a bull caught in a trap. Now let our eyes travel up the mountain. For a while there are still paper trees. They grow scarcer and scarcer, however, as our eyes go higher, and soon timber line is reached. But we have seen clay sheep feeding freely on the higher stretches. Above timber line there is a plateau, and here are the wild goats. The very top is snow capped by cotton. There is one thing more which makes the sand table picture achieve perfection, a waterfall. You, I suppose, are as dull as I, and do not know how it was made, but fortunately we have a guide. Hidden among the rocks is a rubber tube which has its higher end in a pail of water. The second grade has cemented the path which the brook takes so that it will be solid, and the water flows out through a hole at the far end of the sand table.

It was our privilege to start the day pleasantly by seeing this exhibit, because on that morning the second grade was going to have an exercise about the early herdsmen. You may well imagine that with such a precursor we expected the very best, and as we entered the Old Gymnasium our spirits were high, for from the pictures on the stage and the arrangement of the chairs we gathered that we would not be disappointed. The Old Gymnasium is a rather small room with a stage on one side. But we could see that the acting would not be on the stage, for the curtain was covered with gay pictures. These pictures were made with kalsomine.*

*See illustrations, pages 145 147.

They showed shepherds with their flocks; the caves in which the primitive people lived; the owl, the bird of night; the eagle, the sky bird; and many other important subjects. With the stage forming one side, the chairs were arranged on the other three sides of a hollow rectangle. In this open space we knew the second grade would have its play. Before the play, however, there were stories. I have, perhaps, written too long before giving the stories themselves, but all these things, the sand table, the pictures, the small room, the intimacy of the hollow rectangle, made our emotional attitude toward this exercise one of anticipation and cordiality, and I hope your feelings correspond to ours. Here are the stories as the children told them:

Raymond—We have been reading a book called "The Early Herdsmen," *and it is about people who lived a long time ago. They had funny names, like Tether-peg, Spin-a-thread, Root-digger, Pick-a-tree, and a lot of other funny names like that. I will now tell you how the leader of the clan got his name. When he was a little boy his name was Little Beaver. Before Little Beaver was four years old, his mother gave him a little puppy dog. The puppy dog's name was Cubby. Little Beaver taught Cubby to stand on her hind legs and beg for a bone, and when she begged for it she always got it. In a year Cubby was a full-grown dog, but Little Beaver was still a little boy. One day Little Beaver missed Cubby. He looked and called her everywhere, until he came to a hollow place in an oak tree, and there he found Cubby and four baby puppy dogs. So then he had five dogs. Then in another year those four dogs were full-grown and they had litters of puppies, so that by the time Little Beaver was a full grown man he had such a large pack of dogs that they called him Many-dogs, and they made him leader of the clan. And then he married a woman called Tether-peg, and they went to live in a different place.

Ruth—In winter the people lived in the valley because it was warmer than on the hills, and in the valleys the trees kept the cold winds away. They had their camp near water for drinking and cooking. Here is a picture of one of their pits (pointing to pic-

*The Early Herdsmen," by Katherine Dopp. This book has been published since our "Studies in Education, Volume VII," and bridges a gap in the second grade history therein described.

ture held up by another child). It was really a hole in the ground, deep enough for them to stand up in and wide enough for them to lie down. The roof-hole was a circle three feet across, and they measured it in a very funny way. They measured it with their feet because they hadn't any rulers in those days.

To make the wall stronger, they wove hazelnut branches together and pushed them against the wall, and they daubed clay against that, and they did the same thing for the covering of the roof. For a door they dug a tunnel through the earth, to the top of the ground, and that kept the cold wind out. This is a picture of a hazelnut basket. It has hazelnuts in it for winter. They ate those in winter.

Betty—When summer came, the people were glad to get out of the pits. It was dark and cold in the pits. As soon as summer came, the wild cattle, sheep, and goats went up into the foothills, and the people moved with them. They were hunters, and they hunted for their food. Many-dogs and Big-crow were their leaders. It took them a long time to get in line. It was a long journey, and the people grew tired. Many-dogs blew on his horn and beat his drum and said,

“We are going to the foothills,
We are going to the foothills,—
That is a good place to dwell.”

And the people answered him and said,

“Yes, we are going to the foothills,
We are going to the foothills,—
That is a good place to dwell.”

Last year's second grade made up a tune to these words, and some of them are going to sing it.

Here some of last year's second grade sang the song which you will find on page — of this book.

Joan—Many-dogs and Tether-peg had two children, named Little Bear and Days'-eye. They got dreadfully tired of living in the pits all winter, because the pits were dark and close. They liked summer very much, because they could play and do things. I made up a little poem about what they liked to do:

“I am happy that summer is here.
Now I can swim,

Now I can pick flowers,
Now I can get fresh air.
I am happy that summer is here."

Louise—From the valley to the foothills was a three-days' journey. When they got to the foothills they chose a cool hill that was shaded by oak trees. Before they unpacked, Tether-peg looked around and said, "Let us first make friends with the gods of this place," and she looked around and saw a beautiful oak tree. Mistletoe grew on its branches, and they called it the sacred oak tree. Then she built the sacred fire, and when they were eating their night's meal they saw a beautiful light glowing on the mountain top, but it was dark in the valley, and looking at the mountains they sang.

"We turn our backs to the dark valley;
We turn our faces to the light."

Soon it was twilight in the foothills, and when the snow-capped mountains were dark the people were asleep.

Lester—Early the next morning the men started off with their bows and arrows, away up in the mountains beyond the forest line. They were trying to catch some goats. The goats were not easy to catch, because they lived in flocks and the leader would give the signal when there was any danger and they would all jump to the rocks. But Many-dogs was lucky that day. He shot an eagle and carried home a kid. He got the kid from the eagle's talons. When Do-little and Eat-well saw the kid, they said, "Let's kill it, let's kill it," but when Little Bear and Days'-eye heard them they said, "No, no, let's keep it for a pet."

Madge—Of course the next morning the baby goat wanted some milk. The children didn't have any milk to give it, because they had never tamed any animals before. But Many-dogs said, "Never mind, I will go up to the mountains again and get the mother goat." It was a long, hard trip, but he got the mother goat. He tied her legs together and brought her home on his back. He brought her home alive.

Jack—When the kid was old enough to eat grass by itself, Tether-peg tethered it to one tree and the mother to another tree, and then she got a wooden bowl and milked the mother goat, and the mother goat kicked—she was not used to being milked before.

Tether-peg gave all the milk to the children, and they liked it so much that they wanted more. Then Many-dogs captured some more goats, and they captured some wild sheep. The last animals they learned how to tame were wild cows, and then they had all the milk they wanted.

Jane—The people lived so long ago they didn't know about many things. They thought the sky was flat, and because the sky looked flat they thought it was a great tent, and that the high mountains were the tent poles. They didn't know that the earth turned around the sun, and that when we had day over in China they had night, and that day always followed night. And they didn't like the dark, cold winter nights. They thought that darkness was stronger than light, and they feared that the light would never come back again. Then they didn't know about the four seasons, spring, summer, fall, and winter. They thought summer was a lovely god, because she brought them warmth and food. They thought winter was a terrible god because he brought them no warmth and no food.

Grace—The people thought the sky and the sun were gods, too. The eagle was their sacred bird. They called it sky's messenger, because it flew high up in the blue sky and built its nest on the high mountain top. The birds they didn't like were the owl and the raven. They wanted to scare them away. So they built a great sacred fire to light up the hills and bring summer back.

Robert—We made a sand table story of the people's summer home, and you can see that we have the goats and cows and calves tethered to the trees near the camp. The mountain has two plateaus, one above forest line and the other amongst the trees. The goats are on the higher plateau, and the sheep are in the one among the trees. We have a real waterfall, and in case anybody would like to see it we would be glad to show it after the exercise.

The stories attained our highest hopes. I shall speak later of the quite irrelevant thoughts I had as a teacher. I doubt if I had them until after the exercise. At the time I was glad to know how Many-dogs received his name; that he married Tether-peg, and that they had two children, Little-beaver and Days'-eye. The attitude of the early herdsman toward night and day, towards winter and summer, was of the highest interest, and their mode of living.

during these two seasons was of great importance. It was well I had concentrated on the stories, for they gave the necessary background for what followed, and I was well prepared for any phase of early-herdsman life when Joe, as stage manager, said: "We made a play, and we made a song to go with it. The name of the play is *How Summer Came*.' The Crow Clan lived here (pointing to different corners of the rectangle), and the Bear Clan lives here, and the Eagle Clan lives here, and Many-dog's family lives here in the center, and Summer lives down south there."

A PLAY HOW SUMMER CAME

Scene I

(Many-dogs and his family are huddled together around their fire. The children shiver.)

Little-beaver—I'm cold!

Many-dogs—I'll fix up the fire.

Tether-peg—Be careful, Little-beaver, or you'll burn yourself.

(Little-beaver cuddles up to Many-dogs.)

Little-beaver—I wish winter would go away.

Many-dogs—Winter is a hungry beast.

Tether-peg—Yes, winter is worse than a pack of hungry wolves.

Day's-eye—Can't we scare winter away?

Many-dogs—Winter is too terrible a god for us to fight alone.

Tether-peg—Let's call all the clans together.

Day's-eye—Here's your horn, daddy, blow it.

(Many-dogs blows loudly. The clans answer softly. They come quickly, saying, "What is it, what is it?" They sit in a large circle. All the people look cold and very unhappy. The wise woman rises to speak to them.)

Tether-peg—Winter has driven summer away. Summer is weak and tired, and she will never come back unless we help her. (All crouch down and weep.) Summer's friends are sick. Help us to frighten winter away.

Spin-a-thread—I am the clan mother. My people will help you. What shall we do?

Many-dogs—The earth has forgotten summer. Earth is asleep. Let's awaken her.

All—Yes, yes, let's awaken her!

Big-crow—Beat the drum. Make a loud noise. The Crow Clan will dance and stamp their feet. We will awaken the earth.



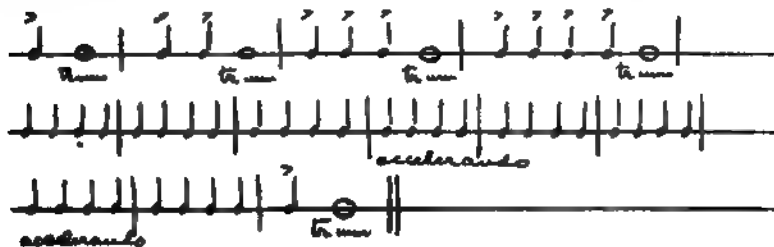
WAKING THE EARTH DANCE

Robert composed this dance. It is danced by six children. A stamp. A jump on both feet. Listen in with ear bent toward the earth during the whole note.

Two stamps—a jump.

Three stamps—a jump.

Four stamps—a jump.



The jump is represented by a whole note, to show how the posture is held while the performer looks at the earth and listens for a sign of response to his efforts to rouse the earth from its slumber. Then begins quick, energetic stamping, increasing in a gradual *accelerando* to a run, ending after eight measures in a final and supreme jump.

(At last the dancers sink down. All the people moan and curl up on the floor.)

Scene II

(Leader of the Eagle Clan sits up, exclaiming.)

Leader—I have a plan! You all know the eagle.

All—Yes, yes.

Leader—He is a strong bird and he is the sky's messenger.

All—That's so!

Leader—Let's bring the eagle down to earth. He will swoop down and in his great talons carry off winter.

All—Play the eagle dance!

THE EAGLE DANCE

Composed by Kerlin. The leader of the dance is a big boy. All the eagle tribe are tall and straight. The leader begins to dance



The eagles flying. The photographs had to be taken out-of-doors because of the light.



The eagles swooping.



by giving the eagle's cry, raising his arms in powerful flight, thrusting his head forward. He searches for Winter, to carry him off in his powerful talons. He circles around the tribe, occasionally swooping downward with a shrill cry and flying far away in his search. But he comes back defeated and sinks to the earth with a cry of discouragement.

Leader (discouraged)—The eagle is not as strong as we thought.

Root-digger—We have tried all these dances, and none of them worked; not anything happened. I am so tired; I am going to sleep.

All—So am I, so am I.

(All the clan fall asleep. Many-dogs moves and stretches, sits up, and rubs his eyes.)

Many-dogs (surprised)—I can't see my hand! Where is Little-beaver? What a dark night it is! (An owl hoots.) That's the owl.

All—I'm afraid, I'm afraid. (They huddle together.)

Day's-eye—Don't get up, mother. I'm afraid.

Tether-peg—Bird of night, come not to our home. You love darkness; you love winter. (The owl hoots again.)

Drag-a-load—We must drive that evil bird away.

All—Yes, yes.

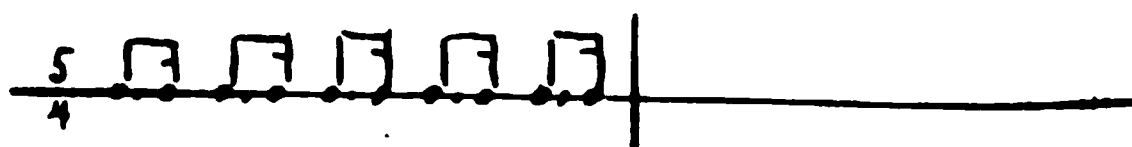
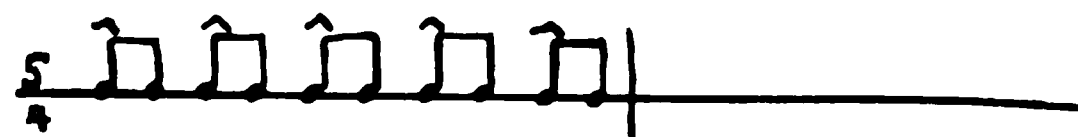
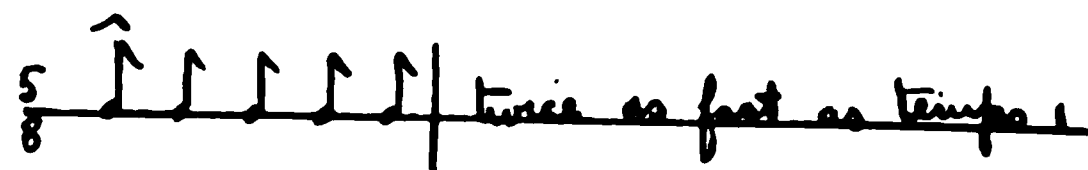
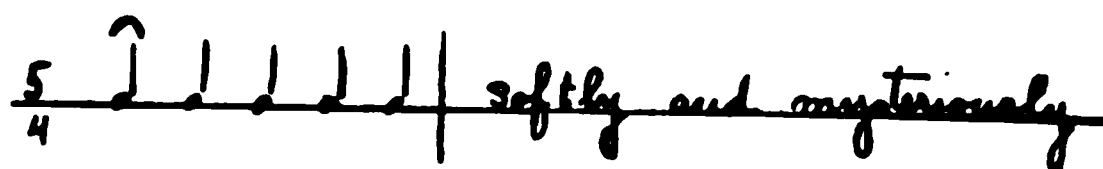
Many-dogs—Dance the sacred fire dance. Get sticks and branches and build a sacred fire.

Drag-a-load—Yes, we will light up the hills and bring summer back.

(Build fire and dance about.)

(Owl flits away.)

SACRED FIRE DANCE



The dancers quietly and quickly build up the fire, then crouch and blow the flame. As it begins to burn, they circle around the fire, representing the slowly mounting flames. The leader jumps and turns in the air on the first count of the measure; the second does this in the second measure; and each one in turn does it once. They all jump every two counts. They pause for a moment to seize a burning brand from the fire, which they use as a torch while leaping wildly in the circle, blowing their horns and trying by their wild efforts to frighten away the darkness and bring back the light and warmth.



Blowing the flame.



The flame is leaping up from the fire.

Drag-a-load—We have driven the owl away, but summer is not yet here.

(All cry and again curl up on the floor.)

Day's-eye—The fire has gone out. I'm cold, mother.

Tether-peg—Dear summer, do come back to us. We are trying our best to help you. We love you.

(Summer and two birds sit up when they hear *Tether-peg*.)

Summer—Why, I thought I heard some one calling me. I must have been asleep. I am sure I felt the earth trembling. It must have been the flowers trying to push up through the ice and snow. And I heard great wings in the air. It must have been the wild geese flying north. I must go back to my friends in the north. I will send the birds ahead of me to tell them I am coming.

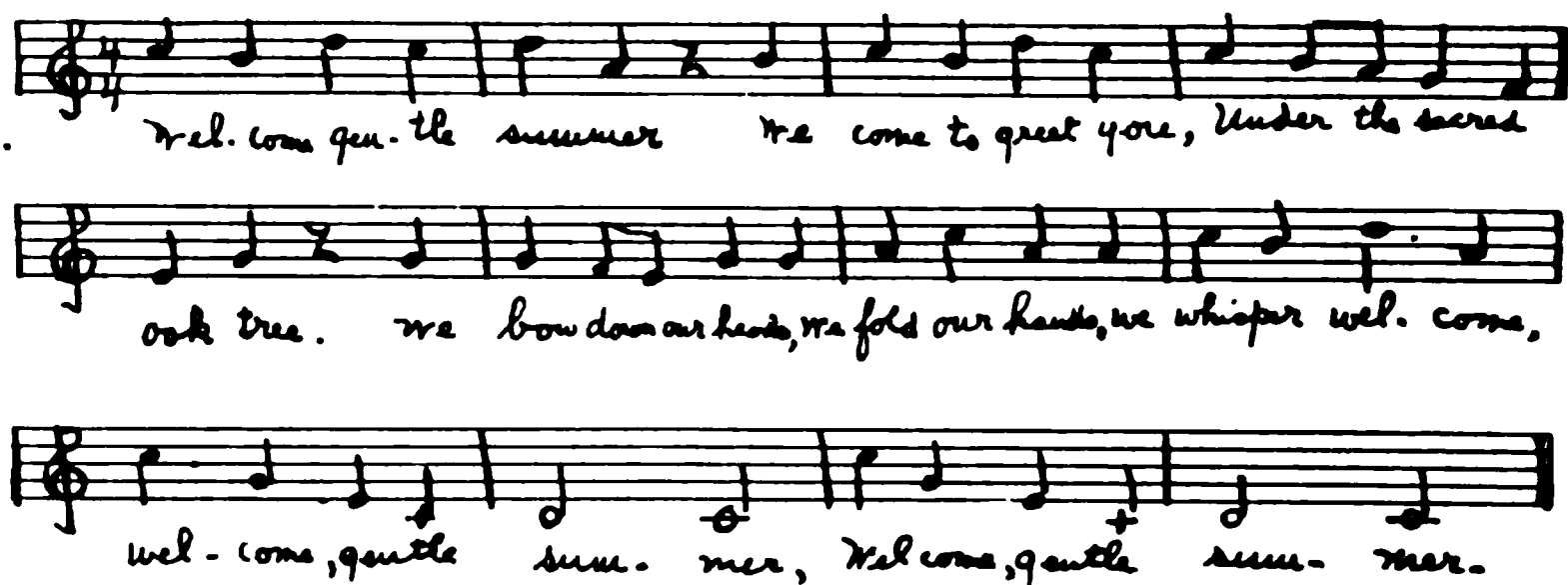
(Birds fly away chirping to awaken the people.)

All—Wake up! wake up! the birds are singing.

Summer stops to pick wild flowers and then runs gayly into the middle of the circle.

Summer—"I'm here, I'm here."

Tether-peg—Let us sing a greeting to summer.



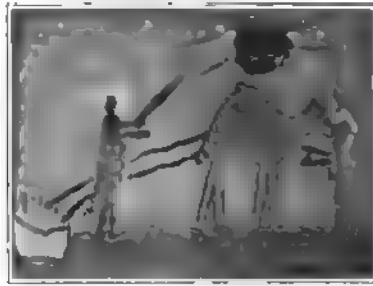
That was the exercise. We had seen pictures and heard stories and a song. We had seen a play which had dancing and singing in it. The *Diaghlieff Ballet*, itself, had not appealed to more senses, and as a result of this many-sided appeal the audience had received a vivid impression.

What of the actors? What had been their experience? After having read about the early herdsman* the children wished to share their knowledge with other members of the school. You may not

be willing to call the result of their effort "art," but at least you must admit that its source is the same as that of art. From what impulse does art arise if not from the desire to express for others a vital moment?

In their school life these children have many opportunities for expressing themselves and for doing creative work. In preparing this exercise their first thought was to write stories and a play which would tell others of the life of the early herdsmen and make them for a brief space live that life. By means of pictures, music, and dances they were able to make the school share the picture in their mind's eye. Did they succeed in this undertaking? They did for me, and I am sure they did for others. I suppose it is hard to imagine human beings farther removed from each other than eighth graders and second graders; yet the second grade earned the highest praise of the eighth grade.

"That was a good play, all right," many eighth graders said, "almost as good as the one we gave when we were in second grade."



Kalsomine painting by child in second grade, showing a method of threshing in early shepherd life. See "Creative Effort in Drawing and Painting."

MISCELLANY AND MORALS

Chesterton remarks somewhere that no one needs to define a chair or a cat because everyone knows what a chair and a cat are. The editorial committee at work on this book made the same assumption in regard to "creative effort"; and the articles contributed by half a score of teachers without collaboration seem to bear out the committee's belief; or the book, perhaps, explains what we mean by the phrase we have adopted.

This book cannot do more than suggest the whole picture. And we have for the most part omitted mention of the enormously variable creative element in many non-academic school activities, though it is present rather surprisingly often. For instance it appears in an unpredictable quantity in the evening meetings of the "Forum," which occur monthly and are open to all high school pupils. The Forum is an organization composed of seven groups which would otherwise exist separately as dramatic, debating, art, literature, science, music, and glee club societies. The children choose the group to which they will belong, make their programs, and conduct their meetings with little help or restriction. Such creativeness as they possess thus finds some outlet here. In connection with student self-government,* a large number of situations occur which call upon pupils to make something: a new constitution (how often!), or a carefully formulated proposal to the assembly, or a nicely built speech of defense or attack—to say nothing of the fact that they build in air an experience in democratic government.

Creative possibilities are almost unlimited, we say, in many departments. Ideally the statement were true. In reality every teacher is handicapped by limitations of time, space, and tools or materials, and by an oversupply of children (from the viewpoint of right pedagogy). Our school is decidedly unideal in some of these particulars. It sometimes seems that we must sacrifice one value or another. We can, we are tempted to exclaim, teach more technique on the one hand, or on the other hand stimulate more of a

*Pamphlet available. See list at end of book.

genuine creative spirit. As a matter of fact, this dilemma has only one horn. Experience convinces us more and more that the essentials of technique are taught more rapidly and more efficiently in relation to work motivated by creative impulses—indeed, that technique cannot be taught so rapidly and efficiently in any other way. Moreover, the creative attitude of mind can enter the teaching and learning of facts and habits.

Perhaps we seem to stretch our term. But one member of the faculty writes:

“The point which it seems to me needs emphasis is the *creative attitude of mind*, the habit of self-expression which fosters and produces artistic creation. While this statement seems rather axiomatic, the attitude certainly fails very often to be evident in a class room. In visiting other schools, and in different groups in this school, it is interesting to note the difference in this particular. Groups range from the stolid, passive type through that more deceptive phase where responsiveness is mistaken for and accepted as creative thinking, to the highly independent, constructive, creative attitude that is happily characteristic of some schools.

“It seems to me practical and necessary for each one of us to consider the conditions that nourish and stimulate creativeness and to analyze the symptoms of its presences. The higher phases of artistic creativeness begin or at least are present with cruder, simpler phases.

“The very attitude of questioning is essentially creative. Criticism, suggestion, initiative, invention, any original thinking, is the soil of creative effort.

“To gain the most vital creative response in literature, music, or art, we need to cultivate it in mathematics, spelling, silent reading, the daily household tasks, in every activity which makes up the day. When a child in learning to subtract perceives that to subtract \$.42 from \$.50 one dime must be changed to ten pennies, and he thinks his minuend as 4 dimes and 10 pennies, and then jumps at the next step, saying ‘I see, then, when you take \$.92 from \$1.00 you change the dollar to 10 dimes’—that child has been creative. You may say that it is merely logical inference, but I maintain, on the contrary, that he has employed logical inference to *create a process*, to him wholly new.

"When a teacher puts the word *fountain* into a spelling list and a child objects, 'Why do you include that word, since we had *mountain* the other day? Why don't we just have one list of all those words?' he has made a contribution to pedagogy. That teachers may have conceived that device before does not lessen the creative value of the act to the child.

"The habitual practice of

- (1) providing an opportunity and motive for expression after any new vivid experience
- (2) maintaining genuine motive for all work
- (3) welcoming suggestion and criticism from the children
- (4) watching the process of thinking rather than the result of a child's thinking

is highly important pedagogically in developing creativeness.

"If we combine with this, attention to right conditions for expression and the constant building up of standards of beauty through the experience and enjoyment of great literature, music, and art, creative results from the children are inevitable. Passivity—that condition which most nearly simulates death—is the one condition in which creativeness cannot exist. Conditions that are vital, life-giving, stimulate and develop it."—*E. A. W.*

To return, however, to the educational experiences which are less debatably creative, the writers of the many sections of our discussion have stated, again without collaboration, a surprisingly large number of similar or complementary conclusions. For the sake of convenience we quote from ourselves:

Reasons for Creative Effort

"The longing for creative expression is inherent in everyone. With children it is as natural as speech, and it is only when the pressure of limitation is put upon them that the work lacks the spontaneity that is instinctive. The child.....loves to play, dramatize, draw, paint, dance, and sing. All that is joyous is his life, and art is the reliving of his joys."—*M. C.*

"The whole.....makes an expression which is joyous and spontaneous, both necessary elements of true creative art."—*M. C.*

"There is ability in children to create which is not being discovered early enough, if at all. Creative talent great enough to

demand expression for itself will usually take care of itself, but lesser talent ought to be developed also—for the good of the individual, if not for the rest of the world.”—*H. G.*

“The finer emotions act as a stimulus for expression and may produce form that has beauty, line, and rhythm.”—*L. D. H.*

Conditions for Creative Effort

“We believe that if a pupil has the necessary leisure, and the right kind of stimulation and help, he may discover for himself a whole new range of power and joy in this work.”—*H. G.*

“The process must be really free. Most of the instruction should come incidentally out of the pupil’s own felt need for it, and must never interfere with the joy of free expression.”—*H. G.*

“To approximate the ideal conditions for true dramatic and creative expression, the class room must supply, as nearly as possible, the freedom that is present when the children, wholly self-motivated, self-directed, self-expressive, play their story unobserved by critical eyes and ears.”—*J. M.*

Increased Accuracy of Impression

“When the attention of the child has been attracted and his interest aroused, there follows a lively interest or mental picture. The child then has an impulse to give some expression to this mental picture. He may give it pantomimic expression or vocal expression, or he may attempt to express it by means of a diary, or to give it some physical embodiment, as in clay. The fuller the impression, the more permanent the idea. The very art of expression causes the individual to realize the points of cloudiness in his impression, tends to make him return to the mental impression and exercise closer observation. The closer observation is possible because the art of expression has clarified the thought and left the mind free for restimulation and for a larger and more truthful impression. Reimpressed, the individual is ready for a new expression of the fuller mental picture, and so the process goes on.”—*J. M.*

Inspiration and Technique

“I believe it is possible to educate children with such a foundation that real art will result. Being eager to create and willing

to recognize the quality of art in others, is true art, is it not? As the child grows in judgment he includes others in his interest. Often quite young children appreciate others' efforts. Confidence takes the place of timidity, and with each effort the child learns control over the medium. The inspirational nature of such activity is easily seen. Technique takes care of itself, and skill develops with the effort to do what the child really desires. Colonel Parker, more than thirty years ago, said, 'The difficulties of technique or skill are very much over-estimated. The reason for this over-rating is that attempts are commonly made to make forms of expression without adequate motive and unimpelled by thought, forms that have no thought correspondence.'"—*M. C.*

"The steps in the development of self-criticism which lead to the establishment of personal standards of judgment and taste come naturally in original work. Self-criticism leads to self-discipline and the deeper action of the will to create. But skill must keep pace with the critical faculty, and we hope to aid in supplying the stimulus and the beginning of technique for a genuine, clear-headed desire for self-expression."

Results

Of the boy building the Viking ship. "Long before his tiny craft is completed he is riding out a gale in the North Sea, founding a colony in sunny Sicily, raiding the Norman coast, or discovering Greenland with Leif Ericson. He knows the 'feel' of the oars, sees himself at the 'steereboard,' senses the thrill of the sea in an open boat. To him his craft is symbolic of all these experiences, and in creating the symbol he has made these experiences a part of himself. Through the sustained effort his ship has called forth, the boy has fused in his memory great masses of impressions and information which would otherwise have remained dormant, undigested, vague, and incomplete.

"Unlike the pupils making desks, the Viking ship boy had no standardized shop tests with which to measure the progress of his work. Because his concept was unique, growing out of his emotional response to the Vikings, the success of his work could be measured only by the adequateness of its correspondence to his mental image. At every stage of its construction there was a constantly recurring demand upon his imagination and judgment, and

a continuous conflict between his mental concept and the resistant material with which he was working. Aside from the physical limitations of his materials and his lack of technical skill the responsibility for his work rested solely upon himself—the clarity of his mental image and the skill with which he selected from the world of his imagination those elements which would best express his concept.”—C. A. K.

“The question may be asked, ‘When can we know that a child’s work has the quality of art?’ It is natural for children to be pleased with what they have made. This is not a complacent state of thought, but results from having put the whole capacity to the work.....If the concept the child has is realized in his work, it has the quality of art. This, however, can only be seen in the child’s response and attitude toward his work. The reaction to the work should be a satisfied child.”—M. C.

“.....there must be a need so vital that beauty is the natural outcome..... The children were sustained throughout by thought. It is the function of art to train the imagination to outward expression. This requires an exercise of thought. The ability to see mentally a situation present, past, or future is imagination.”—M. C.

“It is right that children have the satisfaction of seeing their work come to a successful completion when effort has been made. Success is a stimulus for greater effort. The confidence and power the children gain in this work is of greater value than the outward expression.”—J. M.

“It was worth the time, for during the study the children gained much in discrimination and feeling for the best design and construction, and had opportunity to develop their creative ability and apply it to a practical problem. This meant that *they acquired a surprisingly large amount of technique, knowledge, and skill*, and that they worked with *great zest and enthusiasm* because they were ‘making something *they would all enjoy.*’”—K. C.

“..... we must help them to express what they want to express. Whatever the content, it is surely true that until they have had both these opportunities in full measure, to experience and to express, they have not had the chance of acquiring what Colonel Parker calls ‘that which is noblest in a human being, the impelling power to action.’”—H. G.

To these statements should be added some comment on the value of the child's ready assumption of complete responsibility for the end to be achieved. No need to talk about responsibility when creation is in process. The child is doing the thing. It is his own. Of course he is responsible.

III

In addition to these principles which we have specifically stated, there seem to be at least three conceptions which we take for granted, for the most part, but which deserve explicit emphasis nevertheless.

First, the children have a great deal to express. In all probability most children have more to express than most adults realize or remember, and one function of the school is to increase their wealth of experience. For instance, a great part of the creative product described or presented in this book resulted directly from the building up of rich "backgrounds" in school. The Greeks, the Vikings, the Indians, prehistoric man—these figures of the past become part of children's lives, actually, and fire their imaginations.

Secondly, we hold it to be the sacred right of every child to find out, by trying all avenues of expression, how he can best or most happily express himself. It is a matter of no small importance that Philip discovers in his senior year in high school—during some weeks spent in making etchings—that he can sketch. He cannot sing or dance or act particularly well; that he realized long ago. But now—he can draw! It is an amusing if highly tentative reflection that if the psycho-analyst is right, in his war against repression, the school may credit itself with a vast contribution to adult happiness and peace if the school encourages every child to free self-expression in whatever medium each child can use.

But individual happiness cannot be achieved without the happiness which involves what we may misleadingly call social relationships; our true meaning is most apparent in terms of these creative experiences. Few people would paint a picture or tell a story or sing a song if no one were present to look or to listen. One does not create for oneself alone. Few of us could be really happy in a world in which no one made things for our appreciation. Man

cannot live for himself or by himself alone. Perhaps this truth is nowhere more apparent than in the causes and results of creative effort. In a school, such effort is produced only by the manifestation of this truth in every part of the pupil's life.

IV

We may seem to have said surprisingly little about "beauty." That is partly because we are modest, to a degree. We have presented to the reader compositions, music, and pictures, which we think contain elements of beauty. We have described activities which seemed to us beautiful. We believe that freedom to create produces beauty.

We have not said enough about beauty of environment. We have inveighed against the imitation of art forms; no one ever creates by copying. But aesthetic inclinations and standards are set up subconsciously by whatever beauty the environment contains. Therefore a school must needs be housed beautifully. The house must be furnished with an eye to beauty as well as utility. Children must know beautiful music and literature and see beautiful pictures, and they must be shown beauty in landscape and architecture. Seldom directly, but constantly nevertheless, forms of beauty will be translated into other forms of beauty.

And we have failed to dwell upon the effect that creating beauty has upon one's ability to appreciate beauty created by someone else. Surely it goes without saying. The children who made the art room beautiful looked at all rooms with new eyes. The actor uses his leisure to see other actors perform. He who sings or writes enjoys more discriminatingly all good singing or writing.

All these things are of prime importance. No one has said it better than Keats:

"Beauty is truth, truth beauty—that is all
We know on earth, and all we need to know."

APPENDIX

Additional Suggestions

WRITING AND SPEAKING

The Red Cross asked the school to provide for some international correspondence between school children. The pupils in a ninth grade English class became interested. They were given the address of a Czecho-Slovakian school, and they sent, every month from then on, a kind of book made up of their own writing. The subject of the first booklet was Chicago. Another described our Christmas Toy Shop.

Every occasion on which children can make speeches with an ulterior purpose is seized upon by the English teacher. At Christmas, for instance, our juniors go to every grade in the school to ask for books to clean and mend in Toy Shop.

To a teacher who is watchful, only too many actual needs for writing and speaking are presented by school life. Such writing and speaking contain always a creative element. E. D. C.

DALCROZE EURYTHMICS*

First Grade

A cave-boy dance—pantomiming the actions of a cave boy stealing upon an animal to catch it, seizing it, and executing a dance of exultation and victory, or disappointment and defeat if it escapes.

A little Eskimo—learning to shoot with bow and arrow, and to use the spear.

Mother Goose rhymes set to music by Elliot. These melodies are classics for children and should be given them as a musical background. They are also extremely plastic and can be acted out rhythmically with ease.

Second Grade

The story of Abraham sending his servant to find a wife for Isaac was enacted by showing the long train of camels crossing the desert. Maidens at the well were carrying water in water jars on their heads, and one of these, Rebecca, proved to be the wife sought for Isaac. The music used for this was the Arab Song from the Nutcracker Suite by Tchaikowsky.

*For the background assumed in many of these instances, see "Studies in Education," Vol. VII.

The Early Herdsmen—"The Coming of Summer," a play written by the children from their reading of the book, was chiefly composed of dances which they invented showing the attempts of the people to bring summer back by frightening the winter god away. "Waking the Earth," "The Eagle Dance," and the "Sacred Fire Dance" were shown, danced to the tom-tom beats in different kinds of rhythms. See article "Creative Effort in the Morning Exercise."

Third Grade

The third grade has coöperated with the seniors in producing "Old Pipes and the Dryad," taking the characters of the children, and doing the dance of the Echo Dwarfs. Music by Korngold, "The Brownies," was used for this dance.

Many different Greek plays have been enriched by rhythmic episodes such as the ball game of Nausicaa and the torch dance of the Festival of Athena. Appropriate music composed by Jaques-Dalcroze has been made use of in these instances.

L. D. H.

LITTLE CHILDREN'S MELODIES

In the first grade occasions have arisen for making tunes in connection with the study of the farm and again in the Eskimo work.

In the second grade the children have made up music for songs in a play, "Isaac and Rebecca." This year the children made tunes of the chicken calls.

A group of fifth grade girls have one period a week to write original tunes for poems they choose themselves. I think this arrangement resulted from their interest in writing songs in their Greek work in the fourth grade. They worked in the large group in the fourth grade. In the fifth grade they want to do individual work.

For a description of the background work referred to in the first and second grades, see "Studies in Education," Vol. VII.

L. C.

DRAMATIZING

A full discussion of the subject will be found in "Plays and Play-making in the Elementary and Secondary Schools," by John Merrill and Martha Fleming.

CREATIVE EFFORT IN DESIGN

Gifts for the seniors at graduation: Parchments carrying a quotation on the theme of the senior "class word" are lettered and decorated annually by the seventh grade. One eighth grade made individual book plates to give the seniors.

One grade designed and applied frescoes for the walls of the first grade room and the kindergarten.

Costumes, scenery, and special curtains are designed by the children for their plays.

Christmas cards are made, and sometimes are sold for charitable purposes.

All the art work for school annual, *The Record*, is original drawing done by high school pupils.

The eighth grade two years ago made a decorative scheme for their room. Every year that grade designs table-desks to make in the shop, and decorates them individually after making them. K. C.

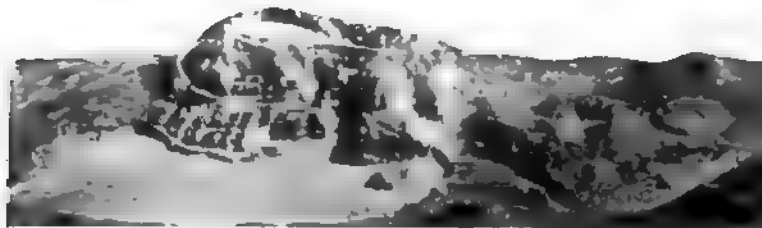
DRAWING AND PAINTING

Everyday life provides adequate provision for creative experiences of all kinds. Imagination, that active faculty of the child-mind, is constantly expressing itself in outward ways; it takes little stimulus to convert an idea into reality. Material such as clay, paints, pencil, scissors, colored paper, without suggestion from the teacher, makes the child love to do. It is not necessary for a special occasion to make a reason for creative effort: it is a child's natural way of doing. There are, however, school experiences and special days, when the children share with the whole school something that is of special interest.

The morning exercise, County Fair, Field Day, Christmas Toy Shop, May Day—these provide motives for original drawings and paintings, posters, designs for costumes and toys. There is joyous response to such opportunity for creative work. M. C.

THE SHOP

During the present year the school shop is attempting to express in a concrete project the general principle underlying our conception of creative activity. The project is centered about the building of a forty-foot lake in the school garden, with bays and harbors, one of which is skirted by a range of miniature mountains formed of the excavated material. The water enters from a small lake in the mountains, flows down a mountain stream, drops over a falls, turning a water wheel in



its descent, and passes through the miniature village at the foot of the mountains and on into a river which winds for a hundred feet, thence entering the larger lake.

Some of the engineering features of the project are the building of a series of locks or lifting boats from the lake to the river, building light-houses, dry docks, harbor equipment, a number of bridges of various types, and an electric railway system which circles the lake, tunnels the mountains, and winds its way up to the highest peak. A detailed account of the origin and development of the project will be the subject of a special publication to be issued by the school in the fall of 1925.

Other creative projects growing out of the work in the shop have been the building of a club house by an eighth grade class, a miniature monastery, many boats, from canoes and a 22-foot motorboat down to tiny models, airplanes, radio sets, kites, puppet stages, and model steam engines and motors. Each year the stage settings for the senior play are planned and built by members of the class, and throughout the year the facilities of the shop are constantly made use of in working out the settings for our County Fair, our spring bazaar, and numerous special events and amateur dramatics.

C. A. K.

THE MORNING EXERCISE

See Francis W. Parker School Year Books, Vol. II, "The Morning Exercise."

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*The first five volumes were published as *Year Books*.

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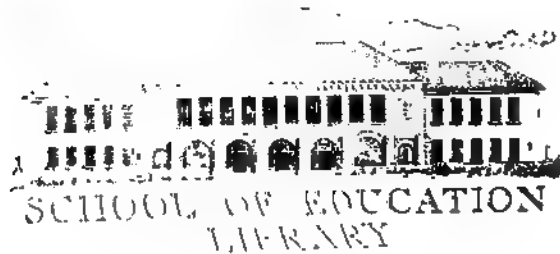
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